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Goulds Pumps

For Every Service

CATALOGUE "C"



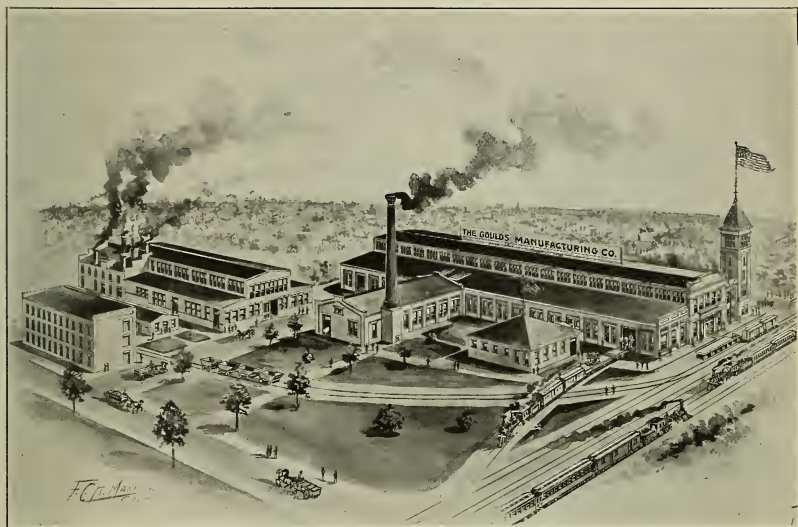
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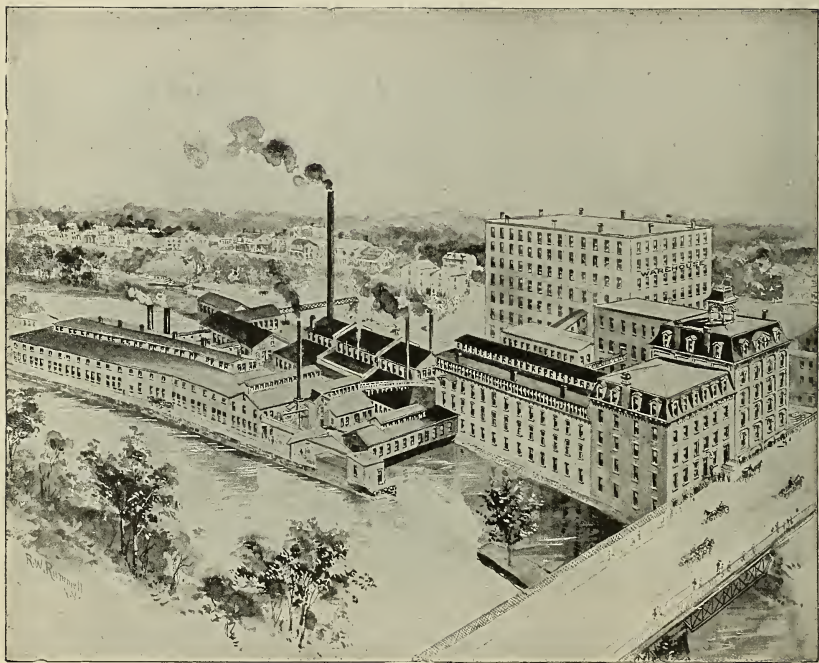
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No. 2 Works

Erected for the Exclusive Manufacture of Goulds Efficient Triplex Power Pumps



Partial View of the Goulds Manufacturing Company's No. 1 Works, Seneca Falls, N. Y., U. S. A.

WORKS FOUNDED IN 1848

Catalogue "C"

OF

PUMPS AND HYDRAULIC MACHINERY

FOR EVERY SERVICE

PUMP SUPPLIES, WELL TOOLS, ETC.

MANUFACTURED BY

The Goulds Manufacturing Co.

WORKS AND MAIN OFFICES

SENECA FALLS, N. Y., U. S. A.

WAREHOUSES

16 MURRAY ST., NEW YORK

Cable Address, "Glaavis," Seneca Falls

PRINCIPAL BRANCHES AND AGENCIES

THE GOULD CO., 22-24 North Canal St., Chicago, Ill.
THE GOULDS MFG. CO., Power Pumps, 8 Oliver St., Boston, Mass.
SMITH & THAYER CO., { Hand and Wind Mill Pumps,
236 Congress St., Boston, Mass.

N. O. NELSON MFG. CO., 8th and St. Charles Sts., St. Louis, Mo.
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REINEKE, WILSON CO., 13 Wood St., Pittsburg, Pa.
WOODIN & LITTLE, 312 Market St., San Francisco, Cal.

MAIN OFFICES OF
THE GOULDS MANUFACTURING CO.
SENECA FALLS, N. Y., U. S. A.

TO THE TRADE

WE TAKE pleasure in presenting this complete catalogue of Pumps and Hydraulic Machinery for every service. We enter upon our fifty-fifth year with increased facilities for manufacture, and shall endeavor to maintain the acknowledged quality which has made "Goulds Pumps" the Standard of the World for more than half a century. We also publish special catalogues devoted exclusively to "Efficient Power Pumps," "Irrigating Pumps, Horse Powers, etc.," "Spray Pumps," and will cheerfully furnish same upon application.

Soliciting a continuance of your favors, we are,

Respectfully,

SEABURY S. GOULD, *President*
W. MYNDERSE, *Vice-President*

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ALL ORDERS will be filled from stock as per catalogue unless we are expressly directed otherwise.

IN MAKING REFERENCE to any of our goods, either for the purpose of inquiry or in orders, always give the catalogue figure. (Fig.)

GENERAL DISCOUNT SHEETS will be furnished to the Trade only, and are subject to change without notice.

NO CLAIMS FOR ALLOWANCE will be entertained unless presented on receipt of goods; neither will we hold ourselves responsible for breakages after goods are delivered in good condition to the Railroad Company.

WITH INFORMATION AT HAND AS TO REQUIREMENTS and conditions of work, we shall be pleased to make recommendations and estimates on any Pumping outfit, and if Pumps are properly set up and cared for, will guarantee their performing all we claim for them.

ORDERS FROM STRANGERS or parties unknown to us and having no commercial rating, must be accompanied by cash or satisfactory references.

ERRORS AND OMISSIONS in this catalogue excepted.

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Useful Notes *on Pumps and Hydraulic Machinery*

There are certain conditions requisite to the successful operation of any Pumps — these factors are briefly:

SUCTION PIPE.—This is the pipe below the lower valves, whether the valves are in the Pump itself or in the cylinder a number of feet below the Pump (yet above the surface of the water), and in practical working should not exceed twenty-five feet in vertical height at sea level, and proportionately less at higher levels. See Table of Barometric Pressure, page 282. This pipe may, however, extend almost any distance horizontally, if care is taken that it fall evenly along its entire length from Pump or Cylinder to water supply. In this connection, as well as in long vertical suction pipes, we urge the use of a foot or check valve, provided pipe is protected from frost, as it retains water when Pump is not in use. Properly, the suction pipe of Single-Acting Cylinders and Pumps should be half the diameter of working barrel, and in suction pipes 100 feet or more in length, or with Pumps working fast, it may be increased, as is true of Double-Acting Pumps.

CONNECTING OR DELIVERY PIPES.—The first term is applied only to pipe between Pump Standard and Lower Barrel or Cylinder, and the last to same pipe as well, but more especially to describe pipe carrying water beyond Pump to any point. These pipes in Single-Acting Pumps may be a trifle smaller than suction pipe. In Double-Acting Pumps they should be same size, and care should be exercised that both are amply large.

HOT WATER.—No Pump will draft hot liquids any distance for the reason that the vapor or steam rising from the liquid passes through the suction pipe into the Pump and fills it with vapor instead of water. Therefore, for pumping hot liquids, the Pump should be placed as near supply as practicable, or better, under flooded suction, forcing the liquid upward instead of lifting it by suction. A hot-water Pump always requires metal valves throughout, and should be so ordered.

LIFT AND FORCE.—In connection with each Pump we give approximate or safe working limit (feet head of water or equivalent pressure) to which Pumps are adapted. While there are many factors, such as time of service, care and condition of Pumps, which cannot be estimated or considered, we think our recommendations will generally answer a perplexing question.

See pages 282 to 284 for Tables of Pump Capacities, Power, Speed, etc., together with rules for estimating same

TELEGRAPHIC CIPHER CODE

Wishing to give our correspondents every facility for transmitting telegraphic or cable inquiries, orders, etc., at the least possible expense, we have adopted the following expressions with cipher words opposite. We also use the A. B. C., Lieber, and Commercial Cable Codes. Any of these codes may be used in addressing us and we can reply by same medium.

GENERAL EXPRESSIONS

Saplufu	What cable code do you use?	Site	Please reply immediately by telegram.
Sapluhi	We are waiting to hear from you in reply to our letter of —	Skater	Have sent you this address important communication relating to —
Scoxat	Have sent you at — important communication relating to —	Staudot	We do not understand the — word of cable.
Scoyan	Have received no remittance from — please investigate.	Sighing	Make and hold for shipping instructions.

RELATIVE TO PRICES AND TERMS

Seenat	Quote lowest price on —	Serfubr	Terms cash with order.
Shower	Quote us lowest price by wire on —	Serfvn	Terms cash on receipt of invoice.
Statidu	Will you accept order for — at — per cent discount from list?	Servet	Terms sight draft with bill of lading.
Statiel	Will you accept order for — at \$ — boxing extra?	Servfov	Terms thirty days net.
Statenus	What price did you quote — on —	Stateop	Our lowest price on — boxing extra is \$ —
Serfoal	We quote for immediate acceptance.	Statuus	Our lowest price on — boxing free is \$ —
Serfobs	We will accept your order at prices named.	Statuco	The highest discount we can give is — per cent.
Serfodo	We cannot accept your order at prices named.	Stauck	We have already given you our lowest quotations and cannot reduce them.

RELATIVE TO GOODS IN STOCK

Saplugo	How soon can you ship?	Seemot	Could ship in — days.
Show	At what price and how soon can you furnish?	Seemup	Could ship promptly if ordered immediately.
Sigh	Have you in stock for immediate shipment?	Statemo	Cable received. Will ship immediately.
Sizer	Have order for —. How soon can you ship?	Statenu	Cable received. Will ship in a few days.
Seemig	We can ship at once from stock.		

RELATIVE TO ORDERS AND SHIPMENTS

Scriack	When will you ship — ?	Tup	Prepare for immediate shipment against receipt of our letter this day.
Scriado	Has shipment been made of our order — ?		
Scriaet	Send tracer after goods not received.	Signal	Cancel order —. Will write particulars.
Seer	Ship at once by railroad.	Shorer	Have you shipped us any —? Stock is very much reduced.
Seek	Ship by sailing vessel.		
Seine	Ship at once by express.	Scriafs	We will ship to-day.
Sedge	Ship via steamer.	Serhin	We can (or will) ship to-morrow.
Shirler	Duplicate our order of —	Seabab	We will ship promptly.
Shoor	Delay shipping order —. Have written.	Seabath	We will ship on receipt of order.
Sieve	Give preference over all others to order —	Seabell	We have entered your order and will ship as soon as possible.
Siller	Enter order for —, and ship as soon as possible.		
Skiffen	Telegraph when you will ship our order —		

Telegraphic Cipher Code — Continued

RELATIVE TO ORDERS AND SHIPMENTS — Continued

Seabent	Your order is completed. Please send shipping instructions immediately.	Seabict	Will ship in two weeks.
Seaberb	Will ship in one week.	Seabidu	Will ship in ten days.
Seabeso	Will ship middle of this week.	Seabifd	Shipment has been made.
Seabibs	Will ship last of this week.	Tiltive	If order or shipment — has not been shipped, hold for further advices.

RELATIVE TO CLASSES OF GOODS

Saltiot	Cistern Pumps.	Saltufo	Hydraulic Rams.
Saltiuł	Well Lift and Force Pumps.	Saltugx	Church and School Bells.
Saltiva	Well Pump Standards and Working Heads.	Saluba	Pump repairs.
Saltivg	Wind Mill Pump Standards.	Saluck	Well Points.
Saltixo	Wind Mill Force Pumps.	Saludvo	Garden and Fire Engines.
Saltob	Pump Cylinders.	Saltuen	Hose Carts, etc.
Saltock	Irrigating Pumps.	Saltufos	Double-Acting Force Pumps.
Saltods	Centrifugal Pumps.	Saplodo	Iron Fitted.
Saltoes	Power Pumps.	Saplub	Brass Fitted.
Saltofa	Spray Pumps.	Sapluck	Regular suction and discharge.
Saltogl	Rotary Pumps.	Sapluds	Suction and discharge —
Saltubs	Yard Hydrants, Street Washers, etc.		

RELATIVE TO TRIPLEX PUMPS, MOTORS AND ENGINES

Viduats	Vertical Triplex Single-Acting, capacity — gallons per minute, operating against — pounds per square inch.	Vigonks	Engine is of — H. P., operating at — R. P. M.
Viduau	Vertical Triplex Double Acting, capacity — gallons per minute, operating against — pounds per square inch.	Vigunlo	Pulley wheel of engine — inches diameter, — inches face, running — R. P. M.
Vidueb	Motor is of — H. P., operating — R. P. M.	Vigonmu	Pulley on motor shaft — inches diameter, — inches face, running — R. P. M.
Viduecs	Motor to be direct current for — volts.	Vigonny	Pulley on pinion shaft of pump to be — inches diameter, — inches face.
Viduez	Motor to be alternating current for — volts.	Vigub	Pump to be fitted with bronze plungers, bronze lined cylinders and glands.
Vidueer	Rawhide pinion on pump shaft.	Vigud	Pump to be fitted with bronze pistons and piston rods.
Viduff	Quote on pump and gas engine belt connected.		

RELATIVE TO POWER WORKING HEADS

Vilkvor	Differential Power Working Head to deliver — gallons per minute to a total elevation of — feet.	Vilkwy	Differential power Working Head of — inches stroke, to operate cylinder of — inches diameter, at — feet below surface.
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RELATIVE TO ROTARY PUMPS

Virgll	Underwriter Rotary Fire Pump, capacity — gallons per minute, operating at — pounds pressure.	Virgot	Rotary Force Pump, capacity — gallons per minute, operating at — pounds pressure.
Virgme	Underwriter Rotary Fire Pump with Frictional Gearing.	Virgus	Driving shaft is — inches diameter, running — R. P. M.
Virgnd	Underwriter Rotary Fire Pump to supply — nozzles — inches diameter.		



Goulds Cistern Suction Pump

With Adjustable Ears and Brass Valve Seat

Fig. 1165 represents our new Cistern Suction Pump with revolving standard. The Cylinder is held in place by two adjustable ears, so that the spout can be placed in any position, and the valves are of easy access. The Nos. 0, 1, 2, 3 and 4 are fitted with brass tube valve seat, and the Nos. 5, 6 and 8 with brass bushed valve seat, fitted for either iron or lead pipe to order.

Fig. 1165

Fig. 1165. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Lift	IRON		BRASS LINED	
						Cipher	Price	Cipher	Price
0	2 in.	3¾ in.	.042 gals.	1 in. pipe	25 ft.	Valewo	\$3.50	Itensa	\$5.50
1	2¼ "	5 "	.072 "	1 "	25 "	Valfaw	4.00	Itento	6.00
2	2½ "	5 "	.088 "	1¼ "	25 "	Valfel	4.50	ItenuI	6.50
3	2¾ "	6¾ "	.145 "	1¼ "	25 "	Valfac	5.00	Itenvo	7.25
4	3 "	6¾ "	.171 "	1½ "	25 "	Valgac	5.50	Itenuw	8.00
5	3¼ "	7¼ "	.217 "	1½ "	25 "	Valged	6.50	Iteoba	9.50
6	3½ "	7¼ "	.250 "	1½ "	25 "	Valgis	8.00	Jambat	11.50
8	4 "	7¼ "	.327 "	2 "	25 "	Valgig	10.00	Jambig	15.00

Brass Cylinder Pumps have Brass Plungers. Brass Pumps having all parts brass, except lever, bearer and base, furnished to order. We can fit any of our Cistern Pumps with brass lower valves and metal plunger to adapt them for hot water, at extra net prices given below :

No. 0	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 8
\$1.15	\$1.15	\$1.40	\$1.40	\$1.40	\$1.75	\$1.75	\$2.10

We can pack in an ordinary hogshead or cask about the following number of this and similar Pumps, according to sizes.

No. 0	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 8
40	36	32	24	20	15	12	10

Goulds Cistern Suction Pump

With Revolving Bearer Top and Bolted Base

Fig. 199 is another popular style of Cistern Pump. The lever can be turned to any convenient position. The valve seat is formed by brass tube and flange, and the end of tube threaded to take wrought-iron pipe coupling if gas pipe is used or cast-iron nut with brass tube is supplied, if lead pipe is used. Will fit for lead or wrought-iron pipe as ordered.

To prevent freezing, trip the lower valve by raising lever to extreme height, thus allowing water to leave cylinder. Brass Cylinder Pumps have Brass Plungers.

Fig. 199. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Lift	IRON		BRASS-LINED		*BRASS CYLINDER	
						Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	5 in.	.07 gal.	1 in. pipe	25 ft.	Acruce	\$3.50	Jarrub	\$5.50	Vicious	\$5.50
1	2 1/4 "	6 "	.10 "	1 "	25 "	Actal	4.00	Jarryl	6.00	Vicount	6.00
2	2 1/2 "	6 "	.13 "	1 1/4 "	25 "	Adden	4.50	Jarsad	6.50	Victim	7.00
3	2 3/4 "	6 "	.15 "	1 1/2 "	25 "	Afaro	5.00	Jarsic	7.25	Victond	8.00
4	3 "	6 "	.18 "	1 3/4 "	25 "	Aftez	5.50	Jarsils	8.00	Victory	10.00
5	3 1/4 "	6 "	.22 "	1 1/2 "	25 "	Ageda	6.50	Jarsob	9.50	Victres	13.00
6	3 1/2 "	6 "	.25 "	1 1/2 "	25 "	Aider	8.00	Jarsum	11.50	Victual	18.00
8	4 "	6 "	.33 "	2 "	25 "	Aimed	10.00	Jettist	15.00	Viduah	25.00



Fig. 199

Goulds Cistern Suction Pump

With Revolving Bearer Top and Bolted Base

The cut shows our Fig. 200, with broad bearing and high base.

A substantial hub on the under side of the base has threads on it for coupling on an iron nut with gas-pipe threads cut in it for connecting wrought-iron pipe. Soldering tube is fitted in this nut when connection to lead pipe is desired. To prevent freezing, raise lever to extreme height, thus allowing water to leave cylinder.

Fig. 200. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Lift	IRON		BRASS-LINED		*BRASS CYLINDER	
						Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	5 in.	.07 gal.	1 in. pipe	25 ft.	Aired	\$3.50	Jetton	\$5.50	Ember	\$5.50
1	2 1/4 "	6 "	.10 "	1 "	25 "	Airy	4.00	Jettort	6.00	Emboss	6.00
2	2 1/2 "	6 "	.13 "	1 1/4 "	25 "	Akin	4.50	Jettose	6.50	Emery	7.00
3	2 3/4 "	6 "	.15 "	1 1/2 "	25 "	Alas	5.00	Jetua	7.25	Emit	8.00
4	3 "	6 "	.18 "	1 3/4 "	25 "	Allad	5.50	Jetube	8.00	Empty	10.00
5	3 1/4 "	6 "	.22 "	1 1/2 "	25 "	Ally	6.50	Jetuck	9.50	Enact	13.00
6	3 1/2 "	6 "	.25 "	1 1/2 "	25 "	Alms	8.00	Jetuds	11.50	End	18.00
8	4 "	6 "	.33 "	2 "	25 "	Alsod	10.00	Juggob	15.00	Vigor	25.00

* Brass Cylinder Pumps have brass plungers. Brass Pumps, all parts brass except lever, bearer and base, furnished to order.

We can fit our Cistern Pumps with brass lower valves and metallic packing for hot water, at an extra price. (See page 12.)



Fig. 200

Goulds Cistern Suction Pump

With Revolving Bearer Top and Brackets

The cut, Fig. 202½, represents our new style Revolving Top Cistern Pump with brackets. This is in many instances a more convenient form than a Pump on base. It can be secured to the wall in any place desired, and made to take the least possible room. Has a brass valve seat with tube threaded to take wrought-iron pipe coupling, if gas pipe is used, or nut with soldering tube, if lead pipe is used.

Fig. 202½. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Lift	IRON		BRASS-LINED		*BRASS CYLINDER	
						Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	5 in.	.07 gal.	1 in. pipe	25 ft.	Axe	\$3.50	Juggul	\$5.50	Epic	\$5.50
1	2¼ "	6 "	.10 "	1 "	25 "	Black	4.00	Juggsa	6.00	Epoch	6.00
2	2½ "	6 "	.13 "	1¼ "	25 "	Bad	4.50	Juggta	6.50	Equal	7.00
3	2¾ "	6 "	.15 "	1½ "	25 "	Bagged	5.00	Jughab	7.25	Equip	8.00
4	3 "	6 "	.18 "	1¾ "	25 "	Bail	5.50	Jughid	8.00	Era	10.00
5	3¼ "	6 "	.22 "	1½ "	25 "	Baited	6.50	Jughot	9.50	Erect	13.00
6	3½ "	6 "	.25 "	1½ "	25 "	Bake	8.00	Jughus	11.50	Err	18.00



Fig. 202½

Goulds Cistern Suction Pump

With Revolving Bearer Top and Bolted Base

Fig. 201 represents a Cistern Suction Pump, with revolving bearer top and bolted base. It is rather taller than Fig. 200, on preceding page. Base is bolted to Pump with leather packing between. Fitted for lead or wrought-iron pipe, or both, as ordered. To prevent freezing, raise the lever to extreme height, thus allowing water to leave cylinder.

Fig. 201. Sizes, Prices, Etc.

No.	Diameter Cyl.	Suction	Capacity per Stroke	IRON		BRASS-LINED	
				Cipher	Price	Cipher	Price
0	2 in.	1 in.	.08 gal.	Alum	\$4.00	Jughyl	\$6.00
1	2¼ "	1 "	.10 "	Amid	4.50	Jugica	6.50
2	2½ "	1¼ "	.12 "	Arc	5.00	Jugido	7.00
3	2¾ "	1½ "	.15 "	Arch	5.75	Jugify	8.00
4	3 "	1¾ "	.18 "	Arm	6.25	Jugiga	8.75
5	3¼ "	1½ "	.20 "	Army	6.75	Justizo	9.75
6	3½ "	1½ "	.25 "	Art	8.00	Jusuba	11.50
8	4 "	2 "	.33 "	Ask	10.00	Jusuck	15.00

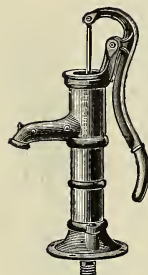


Fig. 201

We can fit our Cistern Pumps with brass lower valves and metallic packing for hot water, at an extra price. (See page 12.)

*Brass Cylinder Pumps have brass plungers. Brass Pumps, all parts brass, except lever, bearer and base, furnished on order.

Goulds Cistern Suction Pump

With Revolving Bearer Top, Double Rod and Guide

The cut shows one of our Cistern Pumps, with double rods and guide rod. So constructed, they work with more uniform stroke, and are on this account much preferred in some localities. In other respects they are just like our other Cistern Pumps.

Fitted for lead or wrought-iron pipe, or both, as ordered.

Fig. 210. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction Fitted for	Lift	IRON		BRASS-LINED		*BRASS CYLINDER	
						Cipher	Price	Cipher	Price	Cipher	Price
2	2½ in.	6 in.	.10 gal.	1¼ in. pipe	25 ft.	Scofed	\$5.00	Jusudo	\$7.00	Virtual	\$7.00
3	2½ "	6 "	.13 "	1¼ "	25 "	Scoff	5.50	Jusufu	7.50	Virtue	8.00
1	2¾ "	6 "	.15 "	1¼ "	25 "	Birdseye	6.00	Jusuga	8.25	Bonded	9.00
4	3 "	6 "	.18 "	1¼ "	25 "	Scoop	6.50	Jusugil	9.00	Virulen	11.00
4	3½ "	6 "	.25 "	1½ "	25 "	Scope	9.00	Keepjan	12.50	Virus	19.00
6	4 "	6 "	.32 "	2 "	25 "	Score	11.00	Keepku	16.00	Visage	26.00

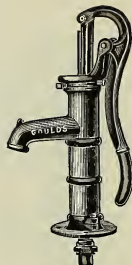


Fig. 210

Goulds Semi-Fluid Suction Pump

With Revolving Bearer Top and Double Rod and Guide. Metallic Fitted

The cut represents our Fig. 444, built for pumping molasses, syrups of any kind, tar, oil, or any other liquids of any consistency, either hot or cold. The piston, piston rod, valves and connecting tube of the iron Pumps are made of brass, while the balance is constructed of iron. When ordered of brass, the whole Pump is made of that metal except the base, top and lever, and is so constructed that no iron is brought into contact with the liquid.

When used for hot liquids we would urge placing the Pump as close to them as possible, as the vapors arising will qualify the vacuum produced by the Pump.

Fitted for lead or wrought-iron pipe connections, as ordered.

Fig. 444. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Lift	IRON		BRASS	
						Cipher	Price	Cipher	Price
2	2½ in.	6 in.	.13 gal.	1¼ in. pipe	25 ft.	Folly	\$12.00	Forcep	\$20.00
4	3 "	6 "	.18 "	1½ "	25 "	Fond	15.00	Ford	25.00
6	3½ "	6 "	.25 "	1½ "	25 "	Fontal	17.00	Forel	30.00
8	4 "	6 "	.33 "	2 "	25 "	Food	21.00	Forge	36.00
10	4½ "	6 "	.41 "	2½ "	25 "	Fopab	25.00	Forky	42.00

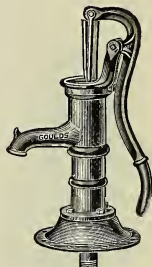


Fig. 444

We can fit our Cistern Pumps with brass lower valves and metallic packing for hot water, at an extra price. (See page 12.)

*Brass Cylinder Pumps have brass plungers. Brass Pumps, having all parts brass, except lever, bearer and base, furnished to order.

Goulds Open-Top Pitcher-Spout Pump

With Open Revolving Bearer Top and Bolted Base

Fig. 205 shows our standard Open-Top Pitcher-Spout Pump. Wherever a cheap but substantial Pump for use in house or over drive-well is required this Pump (or Fig. 205½, Closed Top) is a favorite. It has a revolving bearer top. By lifting lever to extreme height valve is tripped, to prevent freezing. A suction nut, tapped to receive wrought-iron pipe, is furnished on the hub underneath base. Through this is introduced a soldering tube for lead pipe connection.

Fig. 205. Sizes, Prices, Etc.



Fig. 205

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Lift	IRON		*BRASS-LINED	
						Cipher	Price	Cipher	Price
1	2½ in.	4 in.	.09 gal.	1 in. pipe	25 ft.	Baled	\$4.25	Toledo	\$6.50
2	3 "	4 "	.12 "	1¼ "	25 "	Balky	4.75	Toiles	7.25
3	3½ "	4 "	.17 "	1½ "	25 "	Toll	5.25	Toll	8.00
4	4 "	4 "	.22 "	1½ "	25 "	Balmo	6.25	Tolling	9.00
5	4½ "	5 "	.34 "	2 "	25 "	Band	9.50	Tombeey	12.50
6	5 "	5 "	.43 "	2½ "	25 "	Kidfai	17.00	Kidfai	22.00

Goulds Closed-Top Pitcher-Spout Pump

With Closed Revolving Bearer Top and Bolted Base

Fig. 205½ shows our standard Tight-Top Pitcher-Spout Pump. It fills the requirement for a cheap but substantial Pump for use in house, over cistern or over drive-wells. Lever can be turned to any desired position, and by raising lever to extreme height valves are tripped to prevent freezing. A suction nut tapped to receive wrought-iron pipe is furnished on the hub underneath base. Through this is introduced a soldering tube for lead pipe connection.

Fig. 205½. Sizes, Prices, Etc.



Fig. 205½.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Lift	IRON		*BRASS-LINED	
						Cipher	Price	Cipher	Price
1	2½ in.	4 in.	.09 gal.	1 in. pipe	25 ft.	Banked	\$4.25	Bonafide	\$6.50
2	3 "	4 "	.12 "	1¼ "	25 "	Barb	4.75	Briefness	7.25
3	3½ "	4 "	.17 "	1½ "	25 "	Barky	5.25	Cabinet	8.00
4	4 "	4 "	.22 "	1½ "	25 "	Barned	6.25	Casined	9.00
5	4½ "	5 "	.34 "	2 "	25 "	Keepia	9.50	Keeplog	12.50
6	5 "	5 "	.43 "	2½ "	25 "	Keepit	17.00	Kiddog	22.00

*Brass-Lined Pumps furnished with galvanized plungers and rods.

Goulds Vacuum Base Pitcher-Spout Pump

With Closed Revolving Bearer Top and Patent Vacuum Base

Fig. 208 is the same as our Fig. 205½ (page 16), and in addition it has an improvement in the base of the Pump. Oftentimes in driven wells, where the soil is so close as to make an air-tight joint around the pipe, an ordinary Pump will not work well; while with the Vacuum Base Pump all difficulty is obviated, for by creating a vacuum in the base and permitting the water to form there a reservoir, a constant supply of water is obtained for the Pump. We fit them always for wrought-iron pipe, with the thread cut in the hub of the base.

Fig. 208. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Lift	IRON		*BRASS LINED	
						Cipher	Price	Cipher	Price
1	2½ in.	4 in.	.09 gal.	1 in. pipe	25 ft.	Birdy	\$4.75	Chusif	\$7.00
2	3 "	4 "	.12 "	1¼ "	25 "	Bite	5.25	Chusom	7.75
3	3½ "	4 "	.17 "	1¼ "	25 "	Blast	5.75	Chusud	8.50

**Brass-lined Pumps* have galvanized plungers and rods.



Fig. 208

Goulds Round-Spout Pitcher Pump

With Closed Revolving Bearer Top and Bolted Base

Fig. 209 shows our new style Pitcher Pump, with a round spout. This construction prevents water from slopping over spout, and also provides means of hanging bucket upon the spout. This Pump is made like our other Pitcher Pumps, with revolving brake, bolt fastenings and cut-off base.

Fitted for wrought-iron pipe unless otherwise ordered.

To prevent freezing, raise lever to extreme height, thus allowing water to leave cylinder.

Fig. 209. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction Fitted for	Lift	IRON		*BRASS-LINED	
						Cipher	Price	Cipher	Price
1	2½ in.	4 in.	.09 gal.	1 in. pipe	25 ft.	Waled	\$4.25	Clebjac	\$6.50
2	3 "	4 "	.12 "	1¼ "	25 "	Bleat	4.75	Clebkub	7.25
3	3½ "	4 "	.17 "	1¼ "	25 "	Walk	5.25	Cleblip	8.00

**Brass-lined Pumps* have galvanized plungers and rods.



Fig. 209

Goulds Porcelain-Lined Pitcher-Spout Pump

With Open Revolving Bearer Top and Bolted Base

Fig. 1389 shows our new Porcelain-Lined Pitcher-Spout Pump. Being lined throughout with Porcelain-Enamel it is Non-Corrosive and especially adapted for pumping Milk or Salt Water. It has revolving bearer top. By lifting lever to extreme height valve is tripped to prevent freezing. A suction nut, tapped to receive wrought-iron pipe, is furnished on the hub underneath base. Through this is introduced a soldering tube for lead pipe connection when so ordered.

Pump is fitted with galvanized iron plunger and rod.

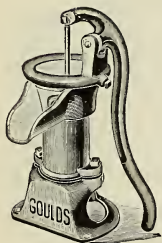


Fig. 1389

Fig. 1389. Size, Price, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Lift	Cipher	Price
2	3 in.	4 in.	.12 gal.	1¼ in. pipe	25 ft.	Churva	\$7.25

Nickel-Plated Cylinder Pitcher-Spout Pump

With Closed Revolving Bearer Top and Bolted Base

Fig. 1170 represents our new Pitcher-Spout Pump, which we offer with Nickel-Plated Seamless-Drawn Brass Cylinder. This Seamless-Drawn Brass Cylinder offers the most serviceable form of Cylinder and admits of attractive finish. Pump has revolving bearer top, galvanized plunger and rod; cut-off base and connections for iron or lead pipe, to order. Our design and construction will recommend itself where a neat, compact Pump, in keeping with good surroundings is required.

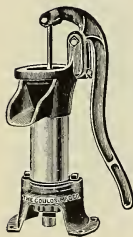


Fig. 1170

Fig. 1170. Size, Price, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Lift	NICKEL-PLATED CYLINDER	
						Cipher	Price
2	3 in.	4 in.	.12 gal.	1¼ in. pipe	25 ft.	Loinac	\$7.50

Goulds "Southern Star" Lift Pump

For Out-Door Use in Warm Climates

We have frequent calls for a Suction and Lift Pump taller and heavier than our largest Cistern and Pitcher Pumps, and offer Fig. 607, which we build about 41 inches high.

It is provided with revolving bearer top and has a long heavy lever. The Pump stock acts as a cylinder, in which is the plunger, and can be emptied of water by raising the lever, thus tripping valve seated on the base. A strong brace gives rigidity to the Pump.

Fig. 607. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Well Rod	Lift	Cipher	Iron
4	3 in.	6 in.	.18 gal.	1¼ in. pipe	7-16 in.	25 ft.	Moredy	\$8.50
5	3¼ "	6 "	.22 "	1½ "	7-16 "	25 "	Morned	9.00



Fig. 607

Goulds "Southern Star" Force Pump

For Out-Door Use in Warm Climates

This Pump is about 50 inches high, has revolving brake or fulcrum, a strong, heavy lever, and is in every way calculated to render good service. A thread is cut on the end of the spout, and with each Pump is sent a half hose coupling and nut for attaching hose.

As in Fig. 607, shown above, the plunger works in the stock of Pump, which can be emptied of water by raising the lever, thus tripping the valve in the base.

When ordered with cock spout we add \$2.50 to list price.

Fig. 608. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Well Rod	Discharge Fitted for	*Lift and Force	Cipher	Iron
4	3 in.	6 in.	.18 gal.	1¼ in. pipe	7-16 in.	1 in. hose	50 ft.	Mort	\$13.00
5	3¼ "	6 "	.22 "	1½ "	7-16 "	1 "	50 "	Mossy	14.00
6	3½ "	6 "	.25 "	1½ "	7-16 "	1 "	40 "	Mostack	15.00



Fig. 608

*Total lift and force from supply to point of delivery, Pump not more than 25 ft. above water.

Goulds "Star" Anti-Freezing Well Lift Pumps

Adapted for "Universal" Bronze Valve and Seat



Fig. 1018

Light Standard



Fig. 550

Medium Standard



Fig. 551

Heavy Standard

For description, table of sizes, prices, etc., see opposite page.

Goulds "Star" Anti-Freezing Well Lift Pumps

Adapted for "Universal" Bronze Valve and Seat

The Pumps illustrated on opposite page represent our line of Revolving Open-Top Anti-Freezing Well Lift Pumps, for out-door cisterns and shallow wells—dug, drilled or driven—where water is not more than 25 feet below ground line. These Pumps are similar in design, differing only in size and weight of Standard. As listed, Pumps are adapted for wells about 28 feet deep. By lowering cylinder to within 15 feet of the water, Pumps can be used in wells 40 to 50 feet in depth. Pumps are tapped and receive connecting pipe near spout, not at base. Pump base to bottom of cylinder, 4 feet.

Figs. 1229 and 1390 (page 67), Metal Lower Valves, to order at extra price.

Fig. 1018. Size, Price, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER		BRASS-TUBE CYL.	
						Cipher	Price	Cipher	Price	Cipher	Price
4	3 x 10 in.	6 in.	.18 gal.	1¼ in. pipe	30 ft.	Diestock	\$8.00	Altitudinal	\$10.50	Biology	\$12.50

Fig. 550. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER	
						Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	50 ft.	Vased	\$8.25	Blushing	\$10.75
4	3 x 10 "	6 "	.18 "	1¼ "	40 "	Vassal	8.50	Brinded	11.00
6	3½ x 10 "	6 "	.25 "	1½ "	30 "	Eobead	9.50	Broadel	12.50

Fig. 551. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER	
						Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	60 ft.	Vastley	\$8.75	Bunstable	\$11.25
4	3 x 10 "	6 "	.18 "	1¼ "	50 "	Vasty	9.00	Canacu	11.50
6	3½ x 10 "	6 "	.25 "	1½ "	40 "	Vastel	10.00	Crot dun	13.00

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water

For larger sizes Well Lift Pumps see Figs. 552 and 1261 page 27

Goulds "Star" Anti-Freezing Well Lift Pumps

Adapted for "Universal" Bronze Valve and Seat



Fig. 1019
Light Standard



Fig. 848½
Medium Standard



Fig. 848
Heavy Standard

For description, table of sizes, prices, etc., see opposite page.

Goulds "Star" Anti-Freezing Well Lift Pumps

Adapted for "Universal" Bronze Valve and Seat

The Pumps, Figs. 1019, 848½ and 848, represented on opposite page, illustrate our line of Revolving Tight-Top, Anti-Freezing Set Length Pumps for shallow wells and cisterns. They are fitted with Tight Top, Polished Rod and Links above. This construction keeps plunger rod in perfect alignment and prevents all foreign substances getting into working parts of the Pump. The general adaptations and capacities are tabulated below. Pumps are tapped and receive connecting pipe near spout, not at base. Pump base to bottom of cylinder, 4 feet.

Figs. 1229 and 1390, Metal Lower Valves, to order at extra price. See page 67.

Fig. 1019. Size, Price, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER		BRASS-TUBE CYLINDER	
						Cipher	Price	Cipher	Price	Cipher	Price
4	3 x 10 in.	6 in.	.18 gal.	1¼ in. pipe	30 ft.	Divela	\$8.75	Cusale	\$11.25	Dancmul	\$13.25

Fig. 848½. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER	
						Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	50 ft.	Weltud	\$9.00	Diastem	\$11.50
4	3 x 10 "	6 "	.18 "	1¼ "	40 "	Weltvd	9.25	Draclym	11.75
6	3½ x 10 "	6 "	.25 "	1½ "	30 "	Errpic	10.25	Dripal	13.25

Fig. 848. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER	
						Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	60 ft.	Wamble	\$9.50	Elytah	\$12.00
4	3 x 10 "	6 "	.18 "	1¼ "	50 "	Wammel	9.75	Elytale	12.25
6	3½ x 10 "	6 "	.25 "	1½ "	40 "	Easlade	10.75	Elytamb	13.75

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water.

Goulds "Star" Anti-Freezing Well Lift Pumps

Adapted for "Universal" Bronze Valve and Seat



Fig. 1039

Light Standard



Fig. 553

Medium Standard



Fig. 554

Heavy Standard

For description, tables of sizes, prices, etc., see opposite page.

Goulds "Star" Anti-Freezing Well Lift Pumps

Adapted for "Universal" Bronze Valve and Seat

Figs. 1039, 553, 554 represent our Anti-Freezing Lift Pumps, with revolving tight top, for shallow wells. In this style of Pump the rod is guided above and moves up and down in a vertical line without oscillating. It also constitutes a tight top, preventing all foreign substance from getting into working parts.

Pumps are tapped and receive wrought-iron connecting pipe near spout.

Figs. 1229 and 1390, Metal Lower Valves, to order at extra price. See page 67.

Fig. 1039. Size, Price, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER	
						Cipher	Price	Cipher	Price
4	3 x 10 in.	6 in.	.18 gal.	1¼ in. pipe	40 ft.	Divellac	\$9.00	Fieldab	\$11.50

Fig. 553. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER	
						Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	60 ft.	Vection	\$9.25	Fieldip	\$11.75
4	3 x 10 "	6 "	.18 "	1¼ "	50 "	Vector	9.50	Flemit	12.00
6	3½ x 10 "	6 "	.25 "	1½ "	40 "	Erripol	10.50	Firema	13.50

Fig. 554. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER	
						Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	70 ft.	Veda	\$9.75	Firfal	\$12.25
4	3 x 10 "	6 "	.18 "	1¼ "	60 "	Vedet	10.00	Flickon	12.50
6	3½ x 10 "	6 "	.25 "	1½ "	50 "	Pierno	11.00	Flujnob	14.00

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water.

For larger sizes of Well Lift Pumps, see Figs. 552 and 1261, page 27.

Goulds Anti-Freezing Well Lift Pumps

Adapted for "Universal" Bronze Valve and Seal

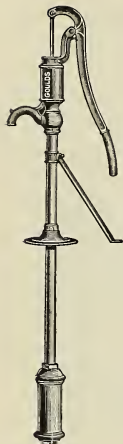


Fig. 1252

Fig. 1252 illustrates our new Anti-Freezing Well Lift Pump with adjustable base and brace, syphon spout and revolving bearer top.

The principal feature of this new Pump is the wrought-iron pipe stock with base and brace, which can be adjusted to meet any requirement of height of lever and spout. Under the base is a heavy malleable pipe nut, connecting standard with set length. This permits extension of set length with the least possible trouble. When so ordered, we can furnish stock or standard complete without set length, adapting it for any style of lower working cylinder.

Fig. 207 is adapted for out-door cisterns and shallow wells, where water is not to be lifted over 15 or 25 feet. By adding to the connecting pipe and piston rod, and so dropping the cylinder farther into the well, until the cylinder is within, say, 15 to 20 feet of the surface of the water, this Pump could be used in wells from 30 to 40 feet deep. This Pump has bolted base. Base to bottom of cylinder, 4 feet.

Figs. 1229 and 1390, Metal Lower Valves (page 67), to order at extra price.



Fig. 207

Fig. 1252. Size, Price, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Lift	IRON		BRASS-LINED CYLINDER		BRASS-TUBE CYLINDER	
						Cipher	Price	Cipher	Price	Cipher	Price
4	3 x 10 in.	5 in.	.15 gal.	1¼ in. pipe	30 ft.	Harevu	\$8.00	Harfab	\$10.50	Knuba	\$12.50

Fig. 207. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER	
						Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	40 ft.	Rendam	\$8.00	Rawego	\$10.50
4	3 x 10 "	6 "	.18 "	1¼ "	40 "	Bent	8.50	Rawchi	11.00
6	3½ x 10 "	6 "	.24 "	1½ "	30 "	Eobale	9.50	Raweid	12.50

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water.

Goulds Anti-Freezing "Stock" Pumps

Lift Pumps of Large Capacity

Pumps shown on this page have large pumping capacity and have come into such general use among farmers having many head of stock to water that they are known to the trade as "Stock Pumps." They are also well suited for Town Pumps in shallow wells.

Fig. 552 stands 4 feet tall. The standard is of cast-iron, with revolving bearer top. Spout is large and waterways ample. Pipe used in set length is 1½ and 2-inch and screws into the standard just below the spout.

Fig. 1261 is made with wind mill top, having adjustable stroke, 6, 8, or 10 inches. Equally adapted for pumping by hand or by wind mill. Spout is large, as is also the upper portion of the standard, which positively prevents any "slopping over," however fast the Pump is worked. Lower portion of standard is formed by a continuation of the 2-inch wrought-iron pipe which forms the set lengths. Base is adjustable.

Figs. 1229 and 1390, Metal Lower Valves (page 67), to order at extra price.



Fig. 552

No.	Cylinder	Stroke	Capacity per Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER	
						Cipher	Price	Cipher	Price
6	3½ x 10 in.	6 in.	.25 gal.	1½ in.	40 ft.	Kidhat	\$11.00	Kidhil	\$14.00
8	4 x 10 "	6 "	.32 "	2 "	30 "	Vectum	12.50	Kidkiss	16.00

Fig. 552. Sizes, Prices, Etc.



Fig. 1261

No.	Cylinder	Stroke	Capacity per Stroke at 10-in. Stroke	Suction	*Lift	IRON CYLINDER		BRASS-LINED CYLINDER	
						Cipher	Price	Cipher	Price
8	4 x 16 in.	{ Adjustable } { 6, 8, 10 in. }	.54 gal.	2 in.	50 ft.	Knowof	\$16.50	Knowvo	\$20.00
10	4½ x 16 "		.69 "	2 "	40 "	Knowug	18.50	Knowyx	22.50

Fig. 1261. Sizes, Prices, Etc.

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water.

Goulds "Star" Anti-Freezing Well Force Pumps

Adapted for "Universal" Bronze Valve and Seat

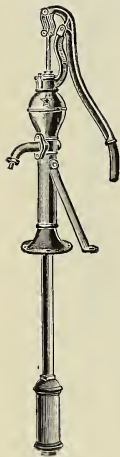


Fig. 1244

Medium Standard
Bolted Spout

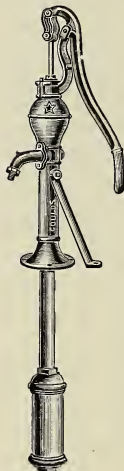


Fig. 852½

Heavy Standard
Bolted Spout

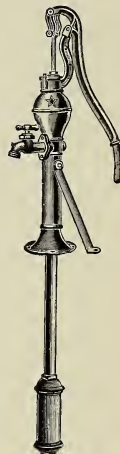


Fig. 1245

Medium Standard
Cock Spout

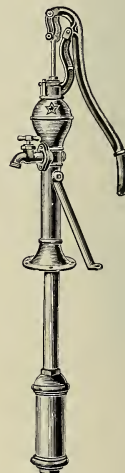


Fig. 882½

Heavy Standard
Cock Spout

For description and table of sizes, prices, etc., see opposite page.

Goulds "Star" Anti-Freezing Well Force Pumps

Adapted for "Universal" Bronze Valve and Seat

Figs. 1244, 1245, 852½ and 882½ represent our "Star" Anti-Freezing Force Pumps. This style is especially adapted for garden, yard and stable use, being fitted for hose discharge. All have an outlet at back of spout for attaching pipe. They are tapped and receive connecting pipe near spout, not at base.

Figs. 1245 and 882½ have cock spout. Pump base to bottom of cylinder, 4 feet.

Figs. 1229 and 1390, Metal Lower Valves (page 67), to order at extra price.

Fig. 1244. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	IRON CYLINDER		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Fopross	\$12.25	Fropo	\$14.75
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	50 "	Frecofs	12.50	Fropol	15.00
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	40 "	Fropac	13.50	Fuchtac	16.50

Fig. 852½. Sizes, Prices, Etc.

No	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	IRON CYLINDER		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	70 ft.	Wared	\$12.75	Fucibad	\$15.25
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Wareful	13.00	Fucidul	15.50
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	50 "	Erripus	14.00	Gavaot	17.00

Fig. 1245. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	IRON CYLINDER		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Gavaux	\$14.75	Genesun	\$17.25
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	50 "	Gavavo	15.00	Gipta	17.50
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	40 "	Genesol	16.00	Giptale	19.00

Fig. 882½. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	IRON CYLINDER		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	70 ft.	Warest	\$15.25	Giptam	\$17.75
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Warfare	15.50	Giptanc	18.00
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	50 "	Erripy	16.50	Giptick	19.50

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds "Star" Anti-Freezing Well Force Pumps

Adapted for "Universal" Bronze Valve and Seat



Fig. 1247
Medium Standard
Bolted Spout

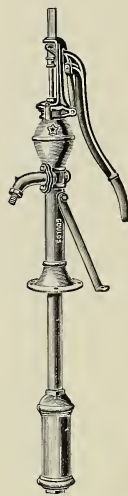


Fig. 424
Heavy Standard
Bolted Spout

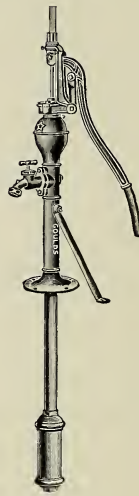


Fig. 1248
Medium Standard
Cock Spout



Fig. 426
Heavy Standard
Cock Spout

For description and table of sizes, prices, etc., see opposite page.

Goulds "Star" Anti-Freezing Well Force Pumps

Adapted for "Universal" Bronze Valve and Seat

Figs. 1247, 424, 1248 and 426 illustrate our "Star" Anti-Freezing Force Pumps, with Revolving Wind Mill Top. Our construction keeps plunger rod in perfect alignment, thus working in cylinder smoothly and evenly. Figs. 1248 and 426 have cock spouts. All are fitted with hose discharge. Pumps are tapped and receive connecting pipe near spout, not at base. Pump base to bottom of cylinder, 4 feet.

Figs. 1229 and 1390, Metal Lower Valves, to order at extra price (page 67).

Fig. 1247. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	IRON CYLINDER		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Giptome	\$13.25	Glujwu	\$15.75
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	50 "	Gipula	13.50	Glujwyn	16.00
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	40 "	Glujvo	14.50	Glukac	17.50

Fig. 424. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	IRON CYLINDER		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	70 ft.	Vell	\$13.75	Glukade	\$16.25
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Vellet	14.00	Glukid	16.50
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	50 "	Endnadu	15.00	Glukief	18.00

Fig. 1248. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	IRON CYLINDER		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Goldid	\$15.75	Grandid	\$18.25
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	50 "	Goldiel	16.00	Grandog	18.50
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	40 "	Gradka	17.00	Granduc	20.00

Fig. 426. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	IRON CYLINDER		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	70 ft.	Vogle	\$16.25	Glukifs	\$18.75
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Voglite	16.50	Glukode	19.00
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	50 "	Endnpi	17.50	Glukock	20.50

*Depth of Wells to which pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from supply to point of delivery

Goulds Anti-Freezing Well Force Pumps

Adapted for "Universal" Bronze Valve and Seat



Fig. 1153

Fig. 1153 illustrates our new Well Lift and Force Pump with adjustable base and brace, syphon spout and revolving bearer top.

The principal feature of this Pump is the wrought-iron pipe stock with base and brace, which can be adjusted to meet any requirement of height of lever and spout.

Fig. 1308, Well Lift and Force Pump, is adapted for deep or shallow wells. Bearer top allows no side wear. Tight top and large air chamber provided with pet cock, making it a lift or force pump at will. Base and brace adjustable. Reversible lever. Spout bolted on, fitted for $\frac{3}{4}$ -inch hose. Opening at back of spout for 1-inch pipe. Brass body cylinder with brass valve seat. Drip plug actuated by rod and handle at base.

Deep-well arrangement is accomplished by lowering cylinder with pipe connected and lengthening plunger rod.

When so ordered, we can furnish Fig. 1308 with Compression Cock on spout at \$2.50 extra list.

Figs. 1229 and 1390, Metal Lower Valves (page 67), to order at extra price.



Fig. 1308

Fig. 1153. Size, Price, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED CYLINDER		BRASS-TUBE CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
4	3 x 10 in.	5 in.	15 gal.	$1\frac{1}{4}$ in. pipe	$\frac{3}{4}$ in. hose	50 ft.	Harfact	\$11.50	Harfbu	\$14.00	Knubel	\$16.00

Fig. 1308. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	Cipher	Brass-Body Cylinder
2	$2\frac{1}{2}$ x 14 in.	10 in.	.213 gal.	$1\frac{1}{4}$ in. pipe	1 in. pipe and $\frac{3}{4}$ in. hose	85 ft.	Ritedu	\$17.00
4	3 x 14 "	10 "	.306 "	$1\frac{1}{4}$ "	1 " " $\frac{3}{4}$ "	60 "	Riteem	18.00

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds Anti-Freezing Well Force Pumps

Adapted for "Universal" Bronze Valve and Seat



Fig. 854

Fig. 854 represents a new Well Force Pump with revolving bearer top, polished rod and links above. The cut will show its construction, and at the very low price it is offered, it represents good value. We aim at simplicity of parts, and these adequately strong for purpose they are intended. Cock spouts furnished at \$2.50 extra list.

Pump base to bottom of cylinder, 4 feet.

Fig. 264 is a modification of our House Force Pump, rendered anti-freezing and adapted for outdoor wells, or those of any depth, by addition of set length and placing working parts—plunger and valve—below frost line and within suction distance of water. Water may be forced through upper discharge into pipe, or delivered at spout.

Pump base to bottom of cylinder, 4 feet.

Figs. 1229 and 1390, Metal Lower Valves (page 67), to order at extra price.

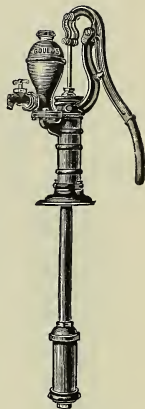


Fig. 264

Fig. 854. Sizes, Prices, Etc.

No.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	IRON CYLINDER		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
3	2 3/4 x 10 in.	6 in.	.15 gal.	1 1/4 in. pipe	1 1/4 in. pipe and 3/4 in. hose	75 ft.	Watchin	\$14.75	Knucab	\$17.25
4	3 x 10 "	6 "	.18 "	1 1/4 "	1 1/4 " " 3/4 "	60 "	Watchma	15.00	Knucud	17.50
6	3 1/2 x 10 "	6 "	.25 "	1 1/2 "	1 1/4 " " 3/4 "	50 "	Raptwed	16.00	Knudad	19.00

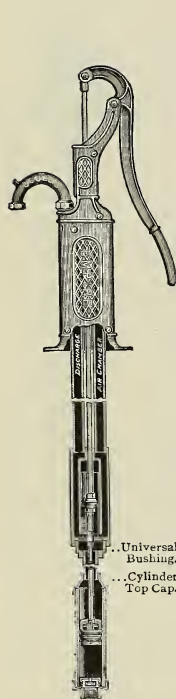
Fig. 264. Sizes, Prices, Etc.

N.	Cylinder	Stroke	Capacity per Stroke	Suction	Discharges	*Lift and Force	IRON CYLINDER		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
2	2 1/2 x 10 in.	6 in.	.13 gal.	1 1/4 in. pipe	1 1/4 in. pipe and 1 in. hose	75 ft.	Clapped	\$16.00	Knudec	\$18.50
4	3 x 10 "	6 "	.18 "	1 1/4 "	1 1/4 " " 1 "	60 "	Clanish	18.00	Knufac	20.50

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 to 20 feet of water, or total lift and force from supply to point of delivery.

Goulds Double-Acting Well Force Pumps

For Shallow or Deep Wells



..Universal
Bushing.
...Cylinder
Top Cap.

Fig. 1362
"Empire"

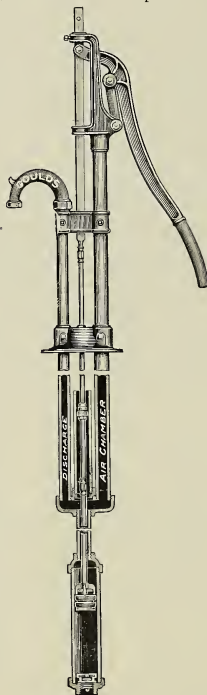


Fig. 1275
"Seneca"



.Cylinder
Top Cap.

Fig. 1146
"Advance"

These Pumps are fully illustrated and described on pages 35 to 39.

Goulds "Seneca" Double-Acting Force Pumps

For Shallow or Deep Wells

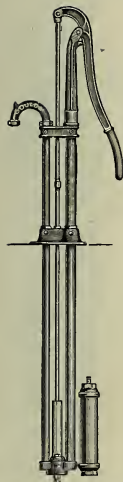


Fig. 1274, "Seneca" Double-Acting Force Pump, is adapted for shallow or deep wells. Wrought-iron pipe is used to form both set length and standard. Base is adjustable; spout revolving. Pumps work easily and deliver smooth, unbroken stream. The smooth discharge is effected by using 2-inch brass differential or force cylinder, which has one-half the displacement of the 3-inch brass suction cylinder furnished.

Brass differential cylinder can be replaced by a stuffing box or a plunger tube (as used in Figs. 1277 and 1278, page 60), when standard is wanted for use with tubular well cylinder or other sizes of cylinder.

Fig. 1275 is same as Fig. 1274, with wind mill top, arranged for 10-inch stroke mill and 6-inch stroke by hand.

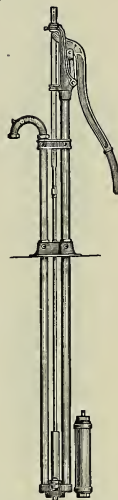


Fig. 1274

Fig. 1274. Size, Price, Etc.

Fig. 1275

No.	Lower Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	BRASS BODY CYLINDER	
							Cipher	Price
4	3 x 10½ in.	5 in.	.15 gal.	1¼ in. pipe	¾ in. hose	75 ft.	Maltvo	\$14.50

Fig. 1275. Size, Price, Etc.

No.	Lower Cylinder	Stroke	Capacity per Stroke to in.	Suction	Discharge	*Lift and Force	BRASS BODY CYLINDER	
							Cipher	Price
4	3 x 14 in.	{ 6 in. hand 10 " mill }	.31 gal.	1¼ in. pipe	¾ in. hose	75 ft.	Maltwe	\$16.00

*Depth of Well to which Pumps may be adapted by placing Lower Cylinders within 150 or 20 ft. of water, or total lift and force from supply to point of delivery.

Goulds "Empire" Double-Acting Force Pumps

With "Universal" Bronze Valve and Seat

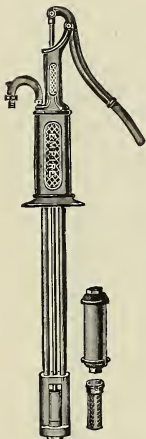


Fig. 1362

Fig. 1362 "Empire" Double-Acting Force Pump supersedes Fig. 1025 differing from it only in having larger discharge and air chamber pipes (1-in.). It has Common Top and is adapted for shallow or deep wells. Pump consists of a standard, with bearer top in one piece, cast in two half sections, strongly bolted and holding securely in place the two supporting pipes which form respectively the air chamber and discharge pipes, connecting with upper cylinder. This upper cylinder is brass-lined and has differential plunger, contributing to an even and uniform discharge of water. We dispense with all stuffing boxes or glands, avoid all undue friction, and secure the easiest possible working Pump. Pump is furnished complete, with brass-lined or brass-body lower cylinder, with "Universal" Bronze Valve and Seat, and universal bushing for either shallow or deep wells. Pumps will go inside 5-inch well casing.

Fig. 1359 is similar to Fig. 1362, but has wind mill top. Our new construction provides guide bushing in bearer top.

Unless otherwise ordered, we ship all "Empire" Pumps put up for shallow wells. *Where wanted for deep wells, unscrew lower cylinder from upper cylinder and attach universal bushing to bottom of upper cylinder and top cap to lower cylinder, and connect with pipe and rod required for any depth of well.* Universal bushing, adapting Pumps for shallow or deep wells, strainer and hose connection go with each Pump and are included in prices given below.



Fig. 1359

Fig. 1362. Sizes, Prices, Etc.

No.	Lower Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	Well Rod	*Lift and Force	BRASS-LINED CYL.		BRASS BODY CYL.	
								Cipher	Price	Cipher	Price
1	2½ x 12 in.	5 in.	.09 gal.	1¼ in. pipe	¾ in. hose	¾ in.	125 ft.	Chestcon	\$14.00	Chetilog	\$15.00
2	2½ x 12 "	5 "	.11 "	1¼ "	¾ "	¾ "	100 "	Chestoc	14.00	Chestpo	15.00
4	3 x 12 "	5 "	.15 "	1¼ "	¾ "	¾ "	75 "	Chestabu	14.50	Chestil	15.50

Fig. 1359. Sizes, Prices, Etc.

No.	Lower Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	Well Rod	*Lift and Force	BRASS-LINED CYL.		BRASS BODY CYL.	
								Cipher	Price	Cipher	Price
1	2½ x 12 in.	6 in.	.10 gal.	1¼ in. pipe	¾ in. hose	¾ in.	125 ft.	Chetjobel	\$15.00	Chetlobe	\$16.00
2	2½ x 12 "	6 "	.13 "	1¼ "	¾ "	¾ "	100 "	Chetja	15.00	Chetjob	16.00
4	3 x 12 "	6 "	.18 "	1¼ "	¾ "	¾ "	75 "	Chetkab	15.50	Chetiub	16.50

*Depth of Wells to which Pumps may be adapted by placing Lower Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds "Empire" Double-Acting Force Pumps

With "Universal" Bronze Valve and Seat



Fig. 1363

Fig. 1363 "Empire" Double-Acting Force Pump supersedes Fig. 1027, differing from it only in having larger discharge and air chamber pipes (1-in.). It has Common Top, Brass Three-way Cock and Connecting Rod, and is adapted for shallow or deep wells. The addition of Three-Way Cock and Connecting Rod for distributing water to any part of premises, houses, barns, etc., will increase the usefulness of this Pump for many purposes.

Fig. 1360 is similar to Fig. 1363, but has wind mill top. Our new construction provides guide bushing in bearer top.

Unless otherwise ordered, we ship all "Empire" Pumps put up for shallow wells; that is, with lower working cylinder screwed into upper cylinder and the universal bushing for bottom of upper cylinder and top attachment for lower cylinder tied on. *Where wanted for deep wells, unscrew lower cylinder from upper cylinder and attach universal bushing to bottom of upper cylinder and top cap to lower cylinder, and connect with pipe and rod required for any depth of well.* Universal bushing, adapting Pumps for shallow or deep wells, strainer and hose connection go with each Pump and are included in prices given below.



Fig. 1360

Fig. 1363. Sizes, Prices, Etc.

No.	Lower Cylinder	Stroke	Capacity per Stroke	Suction	Lower Discharge	Upper Discharge	*Lift and Force	BRASS-LINED CYL.		BRASS BODY CYL.	
								Cipher	Price	Cipher	Price
1	2¼ x 12 in.	5 in.	.09 gal.	1¼ in. pipe	1 in. pipe	¾ in. hose	125 ft.	Chetnbg	\$16.50	Chetogs	\$17.50
2	2½ x 12 "	5 "	.11 "	1¼ "	1 "	¾ "	100 "	Chetman	16.50	Chetnel	17.50
4	3 x 12 "	5 "	.15 "	1¼ "	1 "	¾ "	75 "	Chetnob	17.00	Chetolu	18.00

Fig. 1360. Sizes, Prices, Etc.

No.	Lower Cylinder	Stroke	Capacity per Stroke	Suction	Lower Discharge	Upper Discharge	*Lift and Force	BRASS-LINED CYL.		BRASS BODY CYL.	
								Cipher	Price	Cipher	Price
1	2¼ x 12 in.	6 in.	.10 gal.	1¼ in. pipe	1 in. pipe	¾ in. hose	125 ft.	Chetpon	\$17.50	Chetrog	\$18.50
2	2½ x 12 "	6 "	.13 "	1¼ "	1 "	¾ "	100 "	Chetpat	17.50	Chetqub	18.50
4	3 x 12 "	6 "	.18 "	1¼ "	1 "	¾ "	75 "	Chetral	18.00	Chetuaet	19.00

*Depth of Wells to which Pumps may be adapted by placing Lower Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds "Advance" Double-Acting Force Pumps

With "Universal" Bronze Valve and Seat



Fig. 1146, "Advance" Double-Acting Well Force Pump, has common top for hand power, adapted for shallow or deep wells—open, driven, drilled or cased. It is constructed with seamless brass differential cylinder and brass-lined or brass body lower cylinder, having inside attachments and "Universal" Bronze Valve and Seat.

Fig. 1147 is of the same construction as Fig. 1146, with change of top for 10-inch stroke wind mill or 6-inch stroke by hand.

No. 2 Pumps, with brass body cylinder, will go inside of 3-inch well casing, and with brass-lined cylinder inside 3¼-inch casing.

No. 4 Pumps, with brass body cylinder, will go inside of 3½-inch well casing, and with brass-lined cylinder inside 3¾-inch casing.

Unless otherwise ordered, we ship all "Advance" Pumps put up for shallow wells; that is, with lower working cylinder screwed into upper cylinder and the top attachment for lower cylinder tied on. *Where wanted for deep wells, unscrew lower cylinder from upper cylinder and attach top cap to lower cylinder, and connect with pipe and rod for any depth of well.* Top cap, hose connection and strainer go with each Pump, and are included in price given below.



Fig. 1146

Fig. 1146. Sizes, Prices, Etc.

Fig. 1147

No.	Lower Cyl.	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	BRASS-LINED CYL.		BRASS BODY CYL.	
							Cipher	Price	Cipher	Price
1	2½ x 12 in.	5 in.	.09 gal.	1¼ in. pipe	¾ in. hose	125 ft.	Chewavl	\$14.50	Chevbg	\$15.50
2	2½ x 12 "	5 "	.11 "	1¼ "	¾ "	100 "	Fiendub	14.50	Hareta	15.50
4	3 x 12 "	5 "	.15 "	1¼ "	¾ "	75 "	Fiopal	15.00	Hareula	16.00
6	3½ x 12 "	5 "	.21 "	1½ "	1 "	60 "	Knufig	18.00	Knufut	19.50
8	4 x 12 "	5 "	.27 "	2 "	1 "	40 "	Knufol	20.00	Lamebs	22.00

Fig. 1147. Sizes, Prices, Etc.

No.	Lower Cyl.	Stroke	Capacity per Stroke to Inch	Suction	Discharge	*Lift and Force	BRASS-LINED CYL		BRASS BODY CYL.	
							Cipher	Price	Cipher	Price
1	2½ x 16 in.	{6 in. hand and 10 in. mill}	.17 gal.	1¼ in. pipe	¾ in. hose	125 ft.	Cheucag	\$16.00	Chewou	\$17.00
2	2½ x 16 "		.21 "	1¼ "	¾ "	100 "	Mostub	16.00	Mostve	17.00
4	3 x 16 "		.31 "	1¼ "	¾ "	75 "	Mostwo	16.50	Mostxu	17.50
6	3½ x 16 "		.42 "	1½ "	1 "	60 "	Lameck	20.00	Lamefa	21.50
8	4 x 16 "		.54 "	2 "	1 "	40 "	Lamedd	22.00	Lamegu	24.00

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds Double-Acting Well Force Pumps

With "Universal" Bronze Valve and Seat

Fig. 1148 represents our "Advance" Double-Acting Force Pump, with Wind Mill Top and Three-Way Distributing Valve, by which water may be distributed about the premises. When operated by hand, Pump has 6-inch stroke, and when wind mill is used the stroke is 10-inch. Lower cylinder is either brass or brass-lined, with "Universal" Bronze Valve and Seat.

Unless otherwise ordered, we ship all "Advance" Pumps put up for shallow wells; that is, with lower working cylinder screwed into upper cylinder and the top attachment for lower cylinder tied on. *Where wanted for deep wells, unscrew lower cylinder from upper cylinder and attach top cap to lower cylinder, and connect with pipe and rod for any depth of well.* Top cap, hose connection and strainer go with each Pump, and are included in price given below.

Fig. 1276, "Seneca" Double-Acting Pump, has Wind Mill Top and Three-Way Distributing Valve. Pump has 10-inch stroke by mill and 6-inch stroke by hand. Spout is revolving. Base adjustable. We ship Pump with lower cylinder detached.

An even flow of water is obtained by using differential cylinder of one-half the area of lower cylinder. Other sizes of lower cylinder can be used by replacing the differential cylinder with an attachment having either stuffing box or plunger tube. A Tubular Well Plunger can be drawn through the working-head when tubular well Cylinder is used. Strainer and hose connection included with each Pump.



Fig. 1148

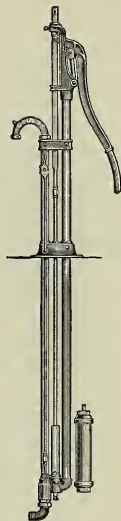


Fig. 1276

Fig. 1148. Sizes, Prices, Etc.

No.	Lower Cylinder	Stroke	Capacity per Stroke, 10 inch	Suction	Lower Discharge	Upper Discharge	*Lift and Force	BRASS-LINED CYLINDER		BRASS BODY CYLINDER	
								Cipher	Price	Cipher	Price
1	2¼ x 16 in.	{ 6 in. hand 10 " mill }	.17 gal.	1¼ in. pipe	1 in. pipe	¾ in. hose	125 ft.	Chieftain	\$19.50	Chibocle	\$20.50
2	2½ x 16 "		.21 "	1¼ "	1 "	¾ "	100 "	Motab	19.50	Motem	20.50
4	3 x 16 "		.31 "	1¼ "	1 "	¾ "	75 "	Motenu	20.00	Moteux	21.00

Fig. 1276. Size, Price, Etc.

No.	Lower Cylinder	Stroke	Capacity per Stroke, 10 inch	Suction	Discharge	*Lift and Force	BRASS BODY CYLINDER	
							Cipher	Price
4	3 x 14 in.	{ 6 in. hand 10 " mill }	.31 gals.	1¼ or 1½ in. pipe	¾ in. hose	75 ft.	Lamecho	\$20.00

* Depth of Wells to which Pumps may be adapted by placing Lower Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds "Star" Well Lift Pump Standards

With Revolving Open Top and Solid Base



Fig. 1023
Light

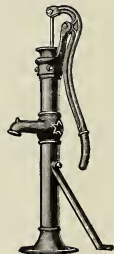


Fig. 846, No. 3
Medium



Fig. 846, No. 4
Heavy



Fig. 846, No. 5
Extra Heavy

Fig. 1023 represents our Light Well Lift Pump Standard, adapted for shallow wells—dug, drilled or driven. It has revolving bearer top, with recess for priming, if necessary.

Fig. 846 represents our "Star" Well Pump Standard, fitted with revolving bowl top and solid base. This style is a great favorite with well drillers. We offer in three sizes and weights.

Sizes and Prices.

	No.	Stroke	Suction	Well Rod	*Lift	Cipher	Price
Fig. 1023	3	6 in.	1¼ in. pipe	¾ in.	{ 2½ in. cylinder, 40 ft. } 3 " 30 "	Dosedab	\$4.50
Fig. 846	3	6 in.	1¼ in. pipe	¾ in.	3 in. cylinder, 40 ft.	Wallow	\$5.00
Fig. 846	4	6 "	1¼ " "	¾ " "	3 " 50 "	Wallpie	5.50
Fig. 846	5	6 "	1¼ " "	¾ " "	3 " 60 "	Wallroc	6.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

Goulds "Star" Well Lift Pump Standards

With Revolving Tight Top and Solid Base



Fig. 1024
Light



Fig. 850, No. 3
Medium



Fig. 850, No. 4
Heavy

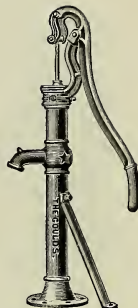


Fig. 850, No. 5
Extra Heavy

Figs. 1024 and 850 represent our Well Pump Standards fitted with revolving tight top, polished rod and links above, and solid base. These Pumps are especially desirable for public places, for the tight top precludes the possibility of stones or sticks being thrown into Pump.

Always tapped near the spout for sizes of wrought-iron pipe given below, although we can fit for $1\frac{1}{2}$ or 2-inch, if so ordered.

Fig. 1024. Size, Price, Etc.

No.	Stroke	Suction	Well Rod	*Lift	Cipher	Price
3	6 in.	$1\frac{1}{4}$ in. pipe	$\frac{3}{8}$ in.	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in. cylinder, } 40 \text{ ft.} \\ 3 \text{ " " " } 30 \text{ " "} \end{array} \right\}$	Dosedac	\$5.25

Fig. 850. Sizes, Prices, Etc.

No.	Stroke	Suction	Well Rod	*Lift	Cipher	Price
3	6 in.	$1\frac{1}{4}$ in. pipe	$\frac{3}{8}$ in.	3 in. cylinder, 40 ft.	Wallrut	\$5.75
4	6 "	$1\frac{1}{4}$ " "	$\frac{3}{8}$ "	3 " " 50 "	Walrvu	6.25
5	6 "	$1\frac{1}{4}$ " "	$\frac{3}{8}$ "	3 " " 60 "	Walt	6.75

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and *cost extra*.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 ft. of water; smaller Cylinders in proportionately deeper wells.

Goulds Deep Well Lift Pump Standard

With Tight Top Guide

Fig. 236 represents our Heavy Deep Well Lift Pump Standard, with tight top for wells up to 100 feet deep. The standard is bolted together near the spout with an intermediate flange, which will be found a great convenience in making pipe and rod connections. Fig. 236 has been a great favorite with the Trade for years. It is built for every-day indiscriminate use. Any size pipe from $1\frac{1}{4}$ -inch to 2-inch can be used with this Standard, but always fitted for $1\frac{1}{4}$ -inch unless otherwise ordered.

Fig. 236. Size, Price, Etc.

Stroke	Suction	Well Rod	*Lift	Cipher	Price
6 in.	$1\frac{1}{4}$ in. pipe	7-16 in.	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in. cyl., 100 ft.} \\ 3 \quad \quad \quad 70 \quad \quad \end{array} \right\}$	Cane	\$10.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 to 20 feet of water; smaller Cylinders in proportionately deeper wells.

Goulds Deep Well Lift Pump Standard

With Tight Top Guide

The cut accurately represents our Heavy Deep Well Lift Pump Standard. The manner of construction in two sections, with flange between, is plainly visible, and will be esteemed a very great convenience by those who have to set up these Pumps. It is very strong and heavy, has balanced handle, and will answer to use on wells from 100 to 200 feet deep.

Any size from $1\frac{1}{4}$ -inch to $2\frac{1}{2}$ -inch pipe can be used with this Standard, but always fitted as below unless ordered otherwise.

Fig. 592. Size, Price, Etc.

Stroke	Suction	Well Rod	*Lift	Cipher	Price
6 in.	$1\frac{1}{2}$ in pipe	7-16 in.	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in. cyl., 150 ft.} \\ 3 \quad \quad \quad 100 \quad \quad \end{array} \right\}$	Milled	\$16.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 to 20 feet of water; smaller Cylinders in proportionately deeper wells.

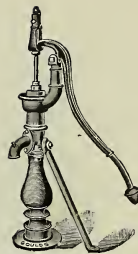


Fig. 236



Fig. 592

Goulds "Star" Well Force Pump Standards

With Revolving Top and Solid Base



Fig. 853, No. 0
Light

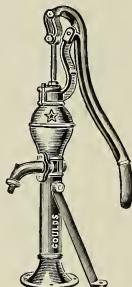


Fig. 853, No. 1
Medium

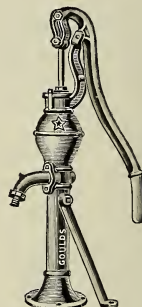


Fig. 853, No. 2
Heavy

Fig. 853 represents our admirable "Star" Well Force Pump Standard arranged with tight top, polished rod and links above. In this Standard the air chamber is made by enlarging stock at top.

All these Standards are tapped for pipe near the spout. Each one has an outlet back of the spout for attaching pipe, and the spout is provided with hose tube and nut to screw on, and not with a clap-trap of a clamp.

Always tapped as below, unless otherwise ordered.

Fig. 853. Sizes, Prices, Etc.

No.	Stroke	Suction	Discharges	Well Rod	*Lift and Force	Cipher	Price
0	6 in.	1 1/4 in. pipe	1 1/4 in. pipe and 3/4 in. hose	7-16 in.	3 in. cyl., 50 ft.	Broadgauge	\$8.50
1	6 "	1 1/4 "	1 1/4 " " 3/4 "	7-16 "	3 " 60 "	Washa	9.00
2	6 "	1 1/4 "	1 1/4 " " 3/4 "	7-16 "	3 " 75 "	Washabl	10.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds "Star" Well Force Pump Standards

With Revolving Top and Cock Spout



Fig. 883, No. 0
Light

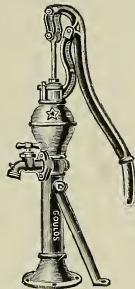


Fig. 883, No. 1
Medium

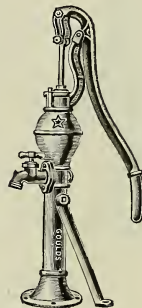


Fig. 883, No. 2
Heavy

This is the same Force Pump Standard in all respects as our Fig. 853, more fully described on preceding page, except that it has a cock spout. When pipe is connected to the opening behind the spout, there must be some means for closing the spout opening, and a cock does this. This one Pump may be made to supply water at the house, or any part of the premises as well.

The Standards are always tapped for pipe near the spout, as below, unless otherwise ordered.

Fig. 883. Sizes, Prices, Etc.

No.	Stroke	Suction	Discharges	Well Rod	*Lift and Force	Cipher	Price
0	6 in.	1 1/4 in. pipe	1 1/4 in. pipe and 3/4 in. hose	7-16 in.	3 in. cyl., 50 ft.	Lamfag	\$11.00
1	6 "	1 1/4 " "	1 1/4 " " 3/4 "	7-16 "	3 " 60 "	Washbal	11.50
2	6 "	1 1/4 " "	1 1/4 " " 3/4 "	7-16 "	3 " 75 "	Washbow	12.50

Cylinders like Figs. 1230 and 1231, page 68 and 69, are required with this Pump Standard, and cost extra.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

“Northern Star” Well Force Pump Standard

With Revolving Top and Solid Base

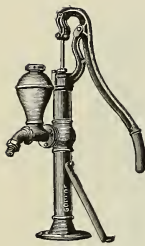


Fig. 855

Fig. 855 represents our “Northern Star” Force Pump Standard, with air chamber on spout, tight top and polished rod and links above. It is simple in construction, strong and compact, and offers good value for a Pump of this class at the low price at which we are able to sell it.

It is tapped near the spout for sizes of wrought-iron pipe given in our table below, although it could be changed, if desired. Cock spouts furnished at \$2.50 extra list.

Fig. 855. Size, Price, Etc.

Stroke	Suction	Discharge	Well Rod	*Lift and Force	Cipher	Price
6 in.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	7-16 in.	{ 2½ in. cyl., 85 ft. } 3 “ 60 “ }	Wash	\$11.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

Goulds “Star” Well Force Pump Standard

With Revolving Top and Solid Base



Fig. 858

Fig. 858 is similar in appearance and construction to Fig. 855, given above, except the standard is built in two sections, with intermediate flange between, into which the suction pipe is screwed. This flange is interchangeable and can be screwed for any size of pipe up to and including 2½-inch, but always shipped as below unless otherwise ordered. Cock spout furnished at \$2.50 extra list.

Fig. 858. Size, Price, Etc.

Stroke	Suction	Discharge	Well Rod	*Lift and Force	Cipher	Price
6 in.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	7-16 in.	{ 2½ in. cyl., 85 ft. } 3 “ 60 “ }	Washoff	\$12.50

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

Goulds Deep Well Force Pump Standard

With Air Chamber on Spout

Fig. 237 represents our Deep-Well Force Pump Standard, with sectional construction, etc., and the addition of an air chamber on the spout. There is a half-hose coupling and tube for attaching hose on the spout.

Always fitted for 1¼-inch pipe, unless ordered to the contrary, but we can fit them for 1½ or 2-inch pipe when desired.

Fig. 237. Size, Price, Etc.

Stroke	Suction	Discharge	Well Rod	*Lift and Force	Cipher	Price
6 in.	1¼ in. pipe	1¼ in. pipe and 1 in. hose	7-16 in.	$\left\{ \begin{array}{l} 2 \text{ in. cyl., } 150 \text{ ft.} \\ 2\frac{1}{2} \text{ " } 100 \text{ " } \\ 3 \text{ " } 70 \text{ " } \end{array} \right\}$	Cannon	\$13.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 to 20 feet of the water, or total lift and force from supply to point of delivery.



Fig. 237

Goulds Deep Well Force Pump Standard

With Air Chamber and Cock Spout

Fig. 887 represents our Fig. 237, Deep-Well Force Pump Standard, described above, arranged with cock spout on air chamber; closing this cock allows discharge to pass through top of air chamber. A hose coupling is screwed on end of cock for attaching hose.

Always fitted for 1¼-inch pipe, unless ordered to the contrary, but we can fit them for 1½ or 2-inch pipe when so ordered.

Fig. 887. Size, Price, Etc.

Stroke	Suction	Discharge	Well Rod	*Lift and Force	Cipher	Price
6 in.	1¼ in. pipe	1¼ in. pipe and 1 in. hose	7-16 in.	$\left\{ \begin{array}{l} 2 \text{ in. cyl., } 150 \text{ ft.} \\ 2\frac{1}{2} \text{ " } 100 \text{ " } \\ 3 \text{ " } 70 \text{ " } \end{array} \right\}$	Cape	\$15.50

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 to 20 feet of the water, or total lift and force from supply to point of delivery.

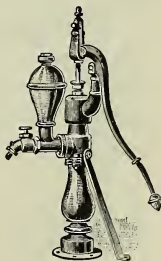


Fig. 887

Goulds Deep Well Force Pump Standard

With Air Chamber on Spout



Fig. 593

The cut represents our Heavy Deep-Well Force Pump Standard. It has sectional standard, tight top with polished rod and links above, heavy balanced lever two supporting braces, adapting it for hard duty. Always fitted for 1½-inch pipe unless otherwise ordered, but we can fit them for pipe up to 2½ inches. Table gives complete data.

Fig. 593. Sizes, Prices, Etc.

No.	Stroke	Suction	Discharge	Well Rod	*Lift and Force	Cipher	Price
1	6 in.	1½ in. pipe	1½ in. pipe and 1 in. hose	7-16 in.	{ 2 in. cyl., 225 ft. }	Milt	\$20.00
2	Same as No. 1 with cock spout.			7-16 "	{ 2½ " 150 " }	Milton	22.50
					{ 3 " 100 " }		

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

* Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds Deep Well Force Pump Standard

With Brake Top and Wood Levers



Fig. 763

The cut represents our Heavy Deep-Well Force Pump Standard, arranged with brake top, so that either one or two men can operate Pump. Intermediate flange below spout is of considerable convenience in making pipe connections. Standard has two supporting braces. Always fitted for 1½-inch pipe unless otherwise ordered, but we can fit them for pipe up to 2½ inches.

Fig. 763. Sizes, Prices, Etc.

No.	Stroke	Suction	Discharge	Well Rod	*Lift and Force	Cipher	Price
1	6 in.	1½ in. pipe	1½ in. pipe and 1 in. hose	7-16 in.	{ 2 in. cyl., 225 ft. }	Waterag	\$21.00
2	Same as above with cock spout.			7-16 "	{ 2½ " 150 " }	Waterbu	23.50
					{ 3 " 100 " }		

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

* Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds "Star" Well Lift Pump Standards

With Revolving Top, for Wind Mill and Hand



Fig. 1032, No. 3
Light



Fig. 762, No. 3
Medium

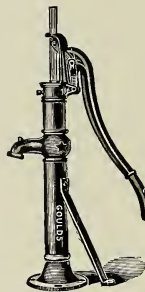


Fig. 762, No. 4
Heavy



Fig. 762, No. 5
Extra Heavy

Our new line of Well Pump Standards with Wind Mill Tops, as shown above, contain all the advantages suggested by the most recent practice, and will be found to be the best of the kind made by any manufacturer. They are tapped for pipe near the spout, have supporting brace, and are a most suitable Standard every way. We can fit the 6-inch or 10-inch stroke Pumps for 1¼, 1½ or 2-inch pipe (No. 5 Standard can be tapped 2½-inch), but always fit as below, unless otherwise directed. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod. We do not send wind mill slides, except when specially ordered.

Fig. 1032. Sizes, Prices, Etc.

Stroke	Suction	Well Rod	*Lift	Cipher	Price
6 in. 10 "	1¼ in. pipe 2 "	7-16 in. 7-16 in. and 1 in.	{ 2½ in. cyl., 60 ft. } { 3 " 40 " }	Dreaded Dreadic	\$6.50 7.50

Fig. 762. Sizes, Prices, Etc.

Stroke	Suction	Well Rod	*Lift	No. 3		No. 4		No. 5	
				Cipher	Price	Cipher	Price	Cipher	Price
6 in. 10 "	1¼ in. pipe 2 "	7-16 in. 7-16 and 1 in.	{ 2½ in. cyl., 85 ft. } { 3 " 60 " }	Vauntfr Raweck	\$7.00 8.00	Vauntful Veader	\$7.50 8.50	Vauntin Veal	\$8.00 9.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

Goulds "Star" Well Lift Pump Standard

Adjustable Stroke

Fig. 780 represents our Adjustable Stroke Pump Standard with Wind Mill top, and is particularly adapted to all kinds of drilled or tubular wells, and those in which working barrels are formed inside of 2-inch pipe.

This Pump can be changed 6, 8 or 10-inch stroke, to suit the length of cylinder and amount of water required.

The stock is tapped immediately below the spout for 2-inch pipe, unless otherwise ordered; and if a Standard is wanted for larger than 2-inch pipe we can arrange our Fig. 412, with variable top, at extra list price. Pumps have coupling for 1-inch wood rod.

Wind mill slides are not furnished unless specially ordered.

Fig. 780. Sizes, Prices, Etc.

Stroke	Suction	Well Rod	*Lift	No. 4		No. 5	
				Cipher	Price	Cipher	Price
6, 8 or 10 in.	2 in. pipe	7-16 and 1 in.	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in. cyl., } 100 \text{ ft.} \\ 3 \quad \quad \quad 70 \text{ " } \end{array} \right\}$	Tomer	\$9.00	Tomeda	\$9.50

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

* Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water.

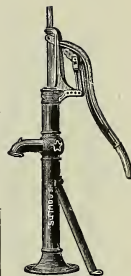


Fig. 780

Goulds "Star" Well Lift Pump Standard

With Revolving Top. For Hand or Wind Mill

Fig. 412, Wind Mill Pump Standard, may be used over wells up to 150 feet deep. The Standard is in two sections, bolted together just below the spout. Between the two sections is interposed a flange into which the connecting pipe is screwed. These flanges are all of a size and drilled exactly alike, so that they will interchange and can be cut for either 1¼, 1½, 2 or 2½-inch wrought-iron pipe. Always fitted as below unless otherwise directed. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod. We do not send wind mill slides unless specially ordered.

Fig. 412. Sizes, Prices, Etc.

Stroke	Suction	Well Rod	*Lift	Cipher	Price
6 in. 10 "	1¼ in. pipe 2 "	7-16 in. 7-16 and 1 in.	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in. cyl., } 100 \text{ ft.} \\ 3 \quad \quad \quad 70 \text{ " } \end{array} \right\}$	Lain Laird	\$10.00 11.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

* Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water; smaller cylinders in proportionately deeper wells.

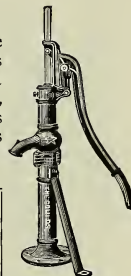


Fig. 412

Goulds "Star" Well Lift Pump Standard

With Long Fulcrum, Wind Mill Top and Adjustable Stroke

Fig. 1356 represents our well known "Star" Well Lift Pump Standard arranged with long fulcrum putting all weight and strain on the base. Side thrust is eliminated and Pump works easily. Fulcrum and lever can be placed at either side or back of Pump. This Standard is particularly adapted to tubular wells, is tapped inside near spout for 2-inch suction pipe, unless otherwise ordered, and fitted with coupling for 1-inch wood rod.

Fig. 1356. Size, Price, Etc.

No.	Stroke	Suction	Well Rod	*Lift	Cipher	Price
4	Adjustable 6, 8 or 10 in.	2 in. pipe	{ 7-16 in. steel " wood }	{ 2½ in. cyl., 100 ft. 3 " 70 "	Vepasd	\$10.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

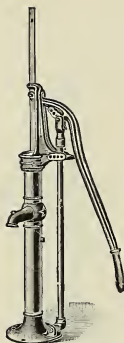


Fig. 1356

Goulds "Star" Well Force Pump Standard

With Long Fulcrum and Wind Mill Top

In Fig. 1355 we offer our well known "Star" Well Force Pump Standard with wind mill top arranged with long fulcrum putting all weight and strain upon the base. Side thrust is eliminated and Pump works easily. Revolving Bearer Top firmly bolted to stock. Fulcrum and lever can be placed at either side or back of Pump.

Outlet is provided back of spout for attaching 1¼-inch pipe if desired. Spouts are flanged and bolted permitting easy exchange for Cock-spout. Tapped inside of standard near spout for 2-inch suction pipe unless otherwise ordered. Coupling for 1-inch wood sucker rod furnished.

Fitted with Cock-spout to order at \$2.50 extra list.

Fig. 1355. Size, Price, Etc.

No.	Stroke	Suction	Spout	Well Rod	*Lift and Force	Cipher	Price
1	Adjustable 6, 8 or 10 in.	2 in. pipe	{ 1¼ in. pipe ¾ " hose }	{ 7-16 in. steel " wood }	{ 2½ in. cyl., 100 ft. 3 " 70 "	Veparc	\$12.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.



Fig. 1355

Goulds Deep Well Lift Pump Standard

For Hand and Wind Mill

Fig. 764 represents one of our best known Extra-Heavy Deep-Well Pump Standards, being bolted together underneath the spout, with intermediate flange, and arranged with wind mill top. It is the strongest and best built Standard ever offered to the trade, and for wind mill use is admirably adapted for heavy and constant work. They are successfully used on wells from 100 to 200 feet deep.

Any size from 1¼-inch to 2½-inch pipe can be used with this Standard, but always fitted as below, unless otherwise ordered. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.

Wind mill slides are not furnished unless specially ordered.

Fig. 764. Sizes, Prices, Etc.

Stroke	Suction	Well Rod	*Lift.	Cipher	Price
6 in. 10 "	1½ in. pipe 2 "	7-16 in. 7-16 " and 1 in.	{ 2½ in. cyl., 150 ft. } { 3 " " 100 " }	Valise Valley	\$17.00 18.50

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

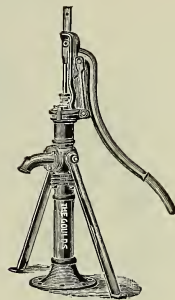


Fig. 764

Goulds Deep Well Force Pump Standard

For Hand and Wind Mill

Fig. 765 represents our new Wind Mill Deep-Well Force Pump Standard of extra heavy pattern, and constructed in two sections with flange between. This last feature is considered a very great advantage by all who put up these Pumps, for by a change of flanges they can readily be fitted for any size from 1¼ to 2½-inch pipe, thus readily adapting them for every need. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod. Always fitted as below unless otherwise ordered. Wind mill slides are not sent unless specially ordered.

Fig. 765. Sizes, Prices, Etc.

Stroke	Suction	Discharge	Well Rod	*Lift and Force	Cipher	Price
6 in. 10 "	1½ in. pipe 2 "	1¼ in. pipe and 1 in. hose 1¼ " " " 1 "	7-16 in. 7-16 " and 1 in.	{ 2½ in. cyl. 150 ft. } { 3 " " 100 " }	Vellum Valor	\$21.00 22.50

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.



Fig. 765

Goulds "Star" Well Force Pump Standards

With Revolving Top. For Hand and Wind Mill

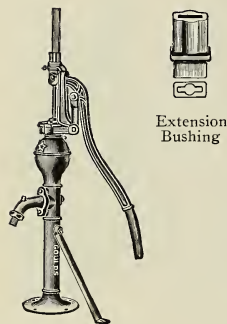


Fig. 422, No. 0
Light

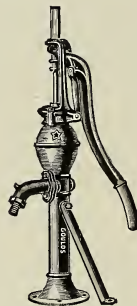


Fig. 422, No. 1
Medium

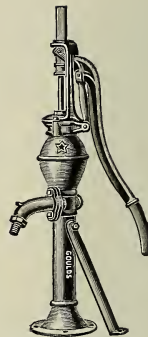


Fig. 422, No. 2
Heavy

Our well-known Fig. 422, Wind Mill Force Pump Standard, we now offer in three sizes. Air chamber is formed by enlarging stock above spout. Revolving bearer top is attached by strong through bolts. Outlet is provided back of spout for attaching pipe if desired. All spouts are flanged and bolted, permitting easy exchange for cock spout. Tapped for suction pipe near the spout. Furnished with nut and hose tube, also brace. Standards can be tapped for any size connecting pipe up to and including 2-inch, but unless otherwise ordered, we tap as given in table. With Standards tapped 2-inch we furnish coupling for 1-inch wood sucker rod. Wind mill slides are not sent unless specially ordered. Our new No. 0 Standard has solid flat and round rod with Extension Guide (see cut), adapting it for 6-inch hand, 10-inch mill stroke.

Fig. 422. Sizes, Prices, Etc.

Stroke	Suction	Discharges	Well Rod	*Lift and Force	No. 0		No. 1		No. 2	
					Cipher	Price	Cipher	Price	Cipher	Price
6 in.	1 1/4 in. pipe	1 1/4 in. pipe and 3/4 in. hose	7-16 in.	{ 2 1/2 in. cyl., 85 ft. }	Grandy	\$9.50	Vehemen	\$10.00	Vehicl	\$11.00
10 "	2 "	1 1/4 " " 3/4 "	7-16 and 1 in.	{ 3 " " 60 " }	.....	.....	Vehicled	11.00	Veil	12.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standard can be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds "Star" Well Force Pump Standards

With Cock Spout and Revolving Top, for Hand or Wind Mill

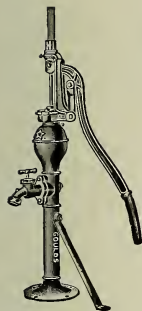


Fig. 423, No. 0
Light



Extension
Bushing



Fig. 423, No. 1
Medium

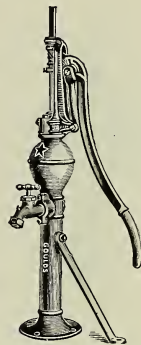


Fig. 423, No. 2
Heavy

Fig. 423, Wind Mill Force Pump Standard, is in all respects same as Fig. 422, more fully described on opposite page, except that it has a Cock Spout. When water is forced upward through pipe connected at back of Standard, the cock offers the necessary means for closing spout.

These Force Standards are exceptionally strong and neat of design. Brace and hose connection are furnished. Tapped to receive suction pipe inside of Standard, near the spout.

Can be tapped for any size connecting pipe up to and including 2-inch, but unless otherwise ordered, we tap 1 $\frac{1}{4}$ -inch. With Standards tapped 2-inch we furnish a coupling for 1-inch wood sucker-rod. Wind mill slides not sent unless specially ordered. Our new No. 0 Standard has solid flat and round rod with Extension Guide (see cut) adapting it for 6-inch hand, 10-inch mill stroke.

Fig. 423. Sizes, Prices, Etc.

Stroke	Suction	Discharges	Well Rod	*Lift and Force	No. 0		No. 1		No. 2	
					Cipher	Price	Cipher	Price	Cipher	Price
6 in.	1 $\frac{1}{4}$ in. pipe	1 $\frac{1}{4}$ in. pipe and $\frac{3}{4}$ in. hose	7-16 in.	{ 2 $\frac{1}{2}$ in. cyl., 85 ft. }	Granfis	\$12.00	Veina	\$12.50	Veined	\$13.50
10 "	2 "	1 $\frac{1}{4}$ " " $\frac{3}{4}$ "	7-16 and 1 in.		.....	.....	Veinles	13.50	Veinly	14.50

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds "Star" Well Force Pump Standard

With Air Chamber on Spout. For Hand or Wind Mill

Fig. 401 represents one of our best forms of Wind Mill Force Pumps, with revolving top, and while not one of the cheapest, possesses features which will recommend it to practical men.

The gas pipe is connected in the body, close under the spout, and either 1, 1¼, 1½ or 2-inch can be used if so ordered, but always fitted as below unless otherwise directed. We cannot fit this standard for 2½-inch pipe. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.

Wind mill slides are not furnished unless specially ordered.

Fig. 401. Sizes, Prices, Etc.

Stroke	Suction	Discharges	Well Rod	*Lift and Force	Cipher	Price
6 in. 10 "	1¼ in. pipe 2 "	1¼ in. pipe and ¾ in. hose 1¼ " " ¾ "	7-16 in. 7-16 and 1 in.	{ 2½ in. cyl., 100 ft. } { 3 " " 70 " }	Meat Meek	\$13.00 14.00



Fig. 401

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds "Star" Well Force Pump Standard

With Air Chamber on Spout. For Hand or Wind Mill

Fig. 402 is similar in appearance and construction to Fig. 401, described above, except the Standard is built in two sections, with intermediate flange, which is a great convenience in making pipe connections near the spout.

The intermediate flange can be cut for any size of pipe up to and including 2½-inch, but always shipped as below unless otherwise ordered. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.

Wind mill slides are not furnished unless specially ordered.

Fig. 402. Sizes, Prices, Etc.

Stroke	Suction	Discharges	Well Rod	*Lift and Force	Cipher	Price
6 in. 10 "	1¼ in. pipe 2 "	1¼ in. pipe and ¾ in. hose 1¼ " " ¾ "	7-16 in. 7-16 and 1 in.	{ 2½ in. cyl., 100 ft. } { 3 " " 70 " }	Minec Mint	\$13.50 14.50

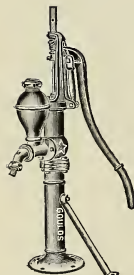


Fig. 402

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds "Southern" Well Force Pump Standard

With Cock Spout. For Hand and Wind Mill

This Wind Mill Force Pump Standard has the intervening flange inserted just above the base. There is a check valve underneath the air chamber, so that these Standards are only adapted to warm climates. The flanges can be screwed for any size of pipe up to and including 3 inches. The upper discharge of air chamber is always fitted for pipe and the nose of the cock for hose. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod. Wind mill slides are not furnished unless specially ordered. Fitted as below unless otherwise directed.

Fig. 413. Sizes, Prices, Etc.

Stroke	Suction	Discharges	Well Rod	*Lift and Force	Cipher	Price
6 in. 10 "	1¼ in. pipe 2 "	1¼ in. pipe and 1 in. hose 1¼ " " 1 "	7-16 in. 7-16 and 1 in.	{ 2½ in. cyl., 100 ft. 3 " 70 "	Roada Roand	\$16.00 17.50

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

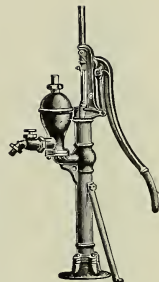


Fig. 413.

Goulds Deep Well Force Pump Standard

With Cock Spout. For Hand and Wind Mill

Fig. 1141, Wind Mill Force Pump Standard, is constructed in two sections, with intermediate flange which may be cut for any size pipe up to and including 3 inches. We always ship as below, unless otherwise ordered. Pump has revolving top, well balanced lever and is fitted with new pattern compression bibb. It has a 2-inch outlet at back of spout. Wind mill slides are not sent unless specially ordered. Price includes a 1-inch wood rod coupling.

Fig. 1141. Size, Price, Etc.

Stroke	Suction	Discharges	Well Rod	*Lift and Force	Cipher.	Price
10 in.	2 in. pipe	2 in. pipe and 1 in. hose	7-16 and 1 in.	3 in. cyl., 75 ft.	Lumtyn	\$16.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Standard and cost extra.

*Depth of Wells to which Pump Standard may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

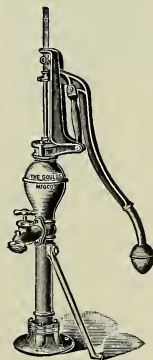


Fig. 1141

Wind Mill Distributing Force Pump Heads

With Vertical Three-Way Valves

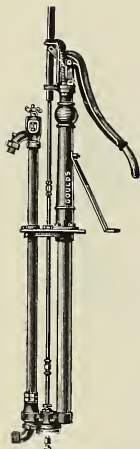


Fig. 1031

Fig. 1031, Wind Mill Distributing Force Pump Head with Brass Stuffing Box, has 1½-inch air chamber pipe, vertical distributing valve and elbow attachment at bottom outlet. This distributing valve is placed in lower working head beyond the reach of frost, and is opened and closed by turning the wheel above stuffing box in discharge piece. The valve and working parts may be examined and repaired by withdrawing discharge pipe through platform base. By removing cap on lower working head and plate on platform, a 2-inch or 2¾-inch plunger can be drawn up and repaired without removing Pump from well.

Fig. 1391 is same as Fig. 1031, except that it is fitted with our New Brass Plunger Tube instead of Stuffing Box.

Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.

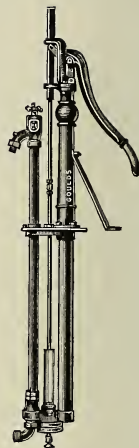


Fig. 1391

Figs. 1031 and 1391. Sizes, Prices, Etc.

Stroke	Suction	Lower Discharge	Upper Discharge	Well Rod	*Lift and Force	FIG. 1031		FIG. 1391	
						Cipher	Price	Cipher	Price
6 in. Adjustable, 6, 8 or 10 in.	1¼ in. pipe 2	1¼ in. pipe 1¼	¾ in. hose ¾	7-16 in. 7-16 and 1 in.	2½ in. cyl., 125 ft. 3 " 100 "	Aslake Awless	\$17.00 18.50	Acnodgin Acolden	\$17.00 18.50

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with Figs. 1031 and 1391 and cost extra.

*Depth of Well to which Pump may be adapted by placing Cylinders within 15 to 20 feet of water, or total lift and force from supply to point of delivery.

Wind Mill Distributing Force Pump Heads

With Vertical Three-Way Valve



Fig. 1033

Fig. 1033, Wind Mill Distributing Force Pump Head with Brass Stuffing Box, has 2-inch air chamber pipe, vertical distributing valve and elbow attachment at bottom outlet.

In these Pumps, we have embodied all the best features of Pumps in this class. The distributing valve is placed in lower working head beyond the reach of frost, and is opened and closed by turning the wheel above stuffing box in discharge piece. This valve and working parts may be examined and repaired by withdrawing discharge pipe through platform base. By removing cap of lower working head and plate on platform, a 2-inch or $2\frac{3}{4}$ -inch plunger can be drawn up and repaired without removing Pump from the well.

Fig. 1392 is same as Fig. 1033, except that pump is fitted with our New Brass Plunger Tube, instead of Brass Stuffing Box.

Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.

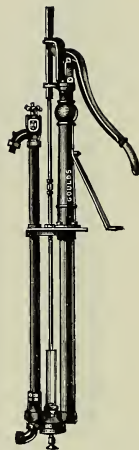


Fig. 1392

Figs. 1033 and 1392. Sizes, Prices, Etc.

Stroke	Suction	Lower Discharge	Upper Discharge	Well Rod	*Lift and Force	Fig. 1033		Fig. 1392	
						Cipher	Price	Cipher	Price
6 in. Adjustable, } 6, 8 or 10 in. }	$1\frac{1}{4}$ in. pipe 2	$1\frac{1}{4}$ in. pipe $1\frac{1}{4}$	$\frac{3}{4}$ in. hose $\frac{3}{4}$ "	7-16 in. 7-16 and 1 in.	$2\frac{1}{2}$ in. cyl., 125 ft. 3 " " 100 "	Asleep Awlwort	\$18.00 19.50	Acolytegl Acveho	\$18.00 19.50

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with Figs. 1033 and 1392, and cost extra.

*Depth of Well to which Pump may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Wind Mill Distributing Force Pump Heads

With Vertical Three-Way Valves



Fig. 1278, "Seneca" Three-Way Distributing Pump Head, is made with wrought pipes extending through the base and forming the standard. A substantial wind mill top is attached to the air chamber pipe. This is so designed, that while allowing 10-inch stroke of wind mill, when lever is attached, the stroke by hand is but 6-inch and work proportionally easier. Base is adjustable. Working head has brass stuffing box. Three-way valve is operated by the single movement of small hand lever.

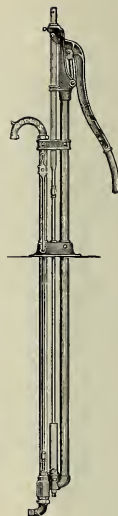


Fig. 1277 differs from Fig. 1278, in that it is provided with a small packing cylinder or plunger tube, which takes the place of a stuffing box.

Plunger, of two-inch Tubular Well Cylinder, can be withdrawn through these working heads without taking up pump, or disturbing distributing pipe. Specially desirable for tubular wells. Working heads are tapped for 2-inch pipe, but can be bushed to 1¼ or 1½-inch.

Fig. 1278

Fig. 1278. Size, Price, Etc.

Fig. 1277

Stroke	Suction	Lower Discharge	Upper Discharge	Well Rod	*Lift and Force	Cipher	Price
10 in. mill. and 6 in. hand	2 in. pipe	1¼ in. pipe	¾ in. hose	7-16 in.	2½ in. cyl., 100 ft. 3 75 "	Maltzan	\$15.00

Fig. 1277. Size, Price, Etc.

Stroke	Suction	Lower Discharge	Upper Discharge	Well Rod	*Lift and Force	Cipher	Price
10 in. mill. and 6 in. hand	2 in. pipe	1¼ in. pipe	¾ in. hose	7-16 in.	2½ in. cyl., 100 ft. 3 75 "	Maltzac	\$15.00

Cylinders like Figs. 1230, 1231, pages 68 and 69, or Fig. 142, page 80, are required with these working heads and cost extra.

*Depth of Well to which Pump may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Wind Mill Distributing Force Pump Heads

With Vertical Three-Way Valve



Fig. 862

Fig. 862, Distributing Head, has stock formed by two handsome sides bolted together over the wrought pipes. Bearer top revolves to any point. The stuffing boxes are both below ground and cannot be affected by the frost. At the lower working head both the top and bottom attachments are bolted to it, and by simply removing these the plunger and rod may be drawn up through the standard. The distributing valve is placed in a brass-lined chamber, and is raised and lowered by a single movement of the small handle shown at side of standard. Air chamber pipe is $1\frac{1}{2}$ -inch; discharge pipe $1\frac{1}{4}$ -inch.

Fig. 866 (not illustrated) is same as Fig. 862, except it has adjustable 6, 8 or 10-inch stroke.

Fig. 863 is very similar to Pumps above described, but somewhat lighter, having $1\frac{1}{4}$ -inch air-chamber pipe and 1-inch discharge pipe. Always fitted for $1\frac{1}{4}$ -inch suction.

Prices below include hose tube for spout and elbow for lower discharge. Wind mill slides are not sent unless especially ordered.

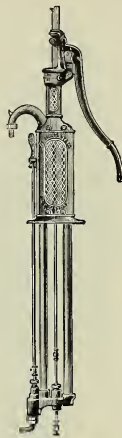


Fig. 863

Figs. 862 and 866. Sizes, Prices, Etc.

	Stroke	Suction	Lower Discharge	Upper Discharge	Well Rod	*Lift and Force	Cipher	Price
Fig. 862 866	$\left\{ \begin{array}{l} 6 \text{ in.} \\ \text{Adjustable,} \\ 6, 8, 10 \text{ in.} \end{array} \right\}$	$1\frac{1}{4}$ in. pipe 2	$1\frac{1}{4}$ in. pipe $1\frac{1}{4}$ "	$\frac{3}{4}$ in. hose $\frac{3}{4}$ "	$\left\{ \begin{array}{l} 7-16 \text{ in.} \\ 7-16 \text{ in. iron} \\ 1 \text{ " wood} \end{array} \right\}$	$2\frac{1}{2}$ in. cyl., 125 ft. 3 100 "	Vow Wafture	\$18.50 20.00

Fig. 863. Size, Price, Etc.

Stroke	Suction	Lower Discharge	Upper Discharge	Well Rod	*Lift and Force	Cipher	Price
6 in.	$1\frac{1}{4}$ in. pipe	$1\frac{1}{4}$ in. pipe	$\frac{3}{4}$ in. hose	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in. cyl., 100 ft.} \\ 3 \text{ " 75 " } \end{array} \right\}$	7-16 in.	Wag	\$15.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with these Pump Heads and cost extra.

*Depth of Well to which Pump may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Wind Mill Regulator Force Pump Head

With Vertical Three-Way Valve

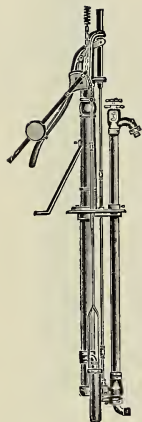


Fig. 1061
Wheel in operation

Fig. 1061, Regulator Force Pump Head (shown to the left when wheel is in operation and to the right when wheel is held out of gear) is a modification of our Fig. 1033, Anti-Freezing Force Pump Head, more fully described on page 59, to which we refer. In operation, the Regulator controls automatically the Wind Mill. The arrangement is such that when the supply tank is full, a common float valve closes inlet to tank and the discharge is forced into hydraulic cylinder, shown raised in engraving to the left. By this operation, the hydraulic cylinder is forced down, as shown in engraving to the right, carrying with it the connecting rod and chain, actuating the cam or chain sheave above, which in turn, by connecting wire, throws mill out of gear. As the water in the tank may lower, the inlet in pipe is re-opened and the operation reversed. The advantages of this automatic control can hardly be overestimated. It should not be forgotten that Pump and Mill work only when tank requires filling, and thus saves the wear and tear. Pumps have coupling for 1-inch wood rod.

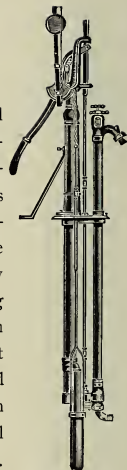


Fig. 1061
Wheel held out of gear

Fig. 1061. Size, Price, Etc.

Adjustable Stroke	Suction	Lower Discharge	Upper Discharge	Well Rod	*Lift and Force	Cipher	Price
6, 8 or 10 in.	2 in. pipe	1¼ in. pipe	¾ in. hose	7-16 and 1 in.	{ 2½ in. cyl., 125 ft. } 3 " 100 "	Chicaw	\$30.00

Cylinders like Figs. 1230 and 1231, pages 68 and 69, are required with this Pump Head and cost extra.

*Depth of Well to which Pump may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds Artesian Well Working Head

With Forked Rod, Pitman and Guide

Fig. 1127, Artesian Well Working Head, is provided with stuffing box, guide, guide rod, brass-cased piston rod and pitman for machine power. It has an intermediate flange for pipe connection, sizes up to and including 3-inch. Discharge for size pipe up to and including 3-inch. Forked rod is supplied with each Working Head.

We can furnish everything complete for wells of any depth.

Always specify size suction and discharge pipe.

Fig. 1127. Sizes, Prices, Etc.

Stroke	Suction	Discharge	Well Rod	*Lift and Force	Cipher	Price
10 in.	1¼ to 3 in. pipe	1¼ to 3 in. pipe	Well rod pin thread corresponding to cylinder ordered.	2¾ in. cyl., 225 ft.	Dotgade	\$30.00
16 "	1¼ to 3 "	1¼ to 3 "		3¼ " 175 "	Dotgib	35.00
				3¾ " 100 "		

Cylinders like Figs. 1230, 548, 904, pages 68 to 75, are required with this Working Head and cost extra.

*Depth of Well to which Working Head may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

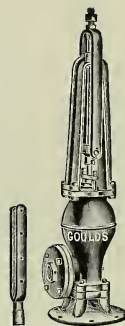


Fig. 1127

Goulds Artesian Well Working Head

Fig. 446 shows a Working Head provided with piston rod, stuffing box, guide, guide rod, pitman and stub end, for operating Fig. 904, Artesian Pump Cylinder, or other long stroke Working Barrels.

This Pump Head may be operated by any machine power and is connected to cylinder by pipe and rod of sufficient length to reach to the bottom of the well or mine.

We can furnish everything complete for wells of any depth.

Always specify size suction and discharge pipe.

Fig. 446. Sizes, Prices, Etc.

Stroke	Suction	Discharge	Well Rod	*Lift and Force	Cipher	Price
16 in.	2 to 5 in. pipe	1½ to 2½ in. pipe	Well rod pin thread corresponding to cylinder ordered.	2¾ in. cyl., 400 ft.	Dingier	\$50.00
18 "	2 to 5 "	1½ to 2½ "		3¼ " 300 "	Direful	55.00
24 "	2 to 5 "	1½ to 2½ "		3¾ " 225 "	Dished	60.00
30 "	2 to 5 "	1½ to 2½ "		4¾ " 150 "	Torsel	70.00
36 "	2 to 5 "	1½ to 2½ "			Tortvd	80.00

Cylinders like Figs. 1230, 548, 904, pages 68 to 75, are required with this Working Head and cost extra.

*Depth of Well to which Working Head may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.



Fig. 446

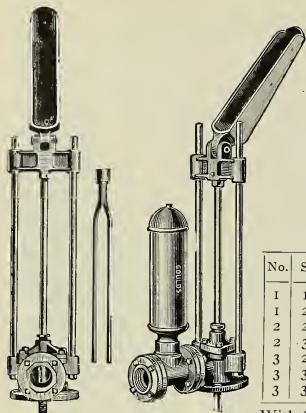


Fig. 979

Fig. 1249

Goulds Artesian Well Working Heads

With Double Rod Guide and Power Connection

Fig. 979 is especially designed to use with our Artesian Pump Cylinders. Piston rod is kept in perfect alignment by double guides at side, while stuffing box below adapts it for forcing equally as well as raising water. The power attachment is hinged and made to fit wood rod of wind mill, though it may be readily adapted for any other power and connecting rod.

Fig. 1249 is of same construction as Fig. 979, with the addition of a large air chamber, which adapts it for working against heavy head. Wood rod coupling will be furnished when ordered, at extra price. Well rod is size iron or wood rod ordered, with pin thread corresponding to cylinder ordered.

Figs. 979 and 1249. Sizes, Prices, Etc.

No.	Stroke	Suction	Discharge	*Lift and Force	Fig. 979 Hendalls	Fig. 1249 Hendibs
1	16 in.	2, 2½ or 3 in. pipe	1, 1¼ or 1½ in. pipe	2¾ in. cyl., 300 ft.	\$15.00	\$25.00
1	24 "	2, 2½ or 3 "	1, 1¼ or 1½ "	2¾ " 300 "	17.50	27.50
2	24 "	3½, 4 or 4½ "	1½, 2 or 2½ "	4¼ " 250 "	30.00	40.00
2	30 "	3½, 4 or 4½ "	1½, 2 or 2½ "	4¼ " 250 "	32.50	42.50
3	24 "	5 or 6 "	2½ or 3 "	5¼ " 200 "	35.00	50.00
3	30 "	5 or 6 "	2½ or 3 "	5¼ " 200 "	37.50	52.50
3	36 "	5 or 6 "	2½ or 3 "	5¼ " 200 "	40.00	55.00

With Cipher always specify number of Head and length of Stroke.

Differential Power Working Head

For Operating Deep Well Pumps

In Fig. 978 we illustrate a Power Pump Head with Differential Plunger, to be used with our Fig. 650, Geared Driving Shaft, page 107, for operating Artesian Cylinders in deep wells.

We should always be advised diameter of Lower Working Cylinder, that we may proportionate this Upper Differential Plunger to have one-half the displacement of Plunger in Lower Cylinder. This contributes to even delivery of water and distribution of power.

Pump Head may be operated by Wind Mill or other machine power.

Fig. 978. Sizes, Prices, Etc.

Stroke	Suction	Discharge	Well Rod	*Lift and Force	Cipher	Price
18 in.	2 to 6 in.	2 to 4 in.	Well rod pin thread corresponding to cylinder ordered.	3¼ in. cyl., 500 ft.	Altrices	\$95.00
24 "	2 to 6 "	2 to 4 "		3¾ " 400 "	Caper	100.00
30 "	2 to 6 "	2 to 4 "		4¼ " 300 "	Careful	115.00
36 "	2 to 6 "	2 to 4 "		5¼ " 200 "	Watery	135.00

See Pages 74 to 76 for Brass Artesian Cylinders, adapted for use with these heads.

*Vertical lift and force, from surface of water to point of delivery, to which Working Head can be adapted by placing Cylinder within 15 or 20 feet of water. For pumping to less elevations larger Cylinders can be used and for greater elevations smaller Cylinders.



Fig. 978

Goulds Well Force Pump Packing-Box Heads

For Wind Mills

We represent herewith our several styles Wind Mill Packing-Box Heads with brass glands and brass-cased rods. Fig. 1007 represents an all-brass Packing-Box Head for open or drilled wells. The discharge is formed by screwing a tee in suction pipe below. This, however, is not included in our price.

Fig. 216. Sizes, Prices, Etc.

Size Pipe	Length Stroke	Well Rod	Cipher	Price
1½ in.	12 in.	7-16 in.	Diveless	\$5.00
1½ "	12 "	7-16 "	Listnis	5.50
2 "	12 "	7-16 "	Listnoz	6.00
2½ "	12 "	½ "	Listmun	7.00
3 "	12 "	½ "	Loagan	7.50
4 "	12 "	¾ "	Loageg	9.00

Fig. 217. Sizes, Prices, Etc.

Size Pipe	Length Stroke	Well Rod	Cipher	Price
1½ in.	12 in.	7-16 in.	Dodging	\$5.00
1½ "	12 "	7-16 "	Loagim	5.50
2 "	12 "	7-16 "	Loagun	6.00
2½ "	12 "	½ "	Lumped	7.00
3 "	12 "	½ "	Lmnpur	7.50
4 "	12 "	¾ "	Lmrat	9.00

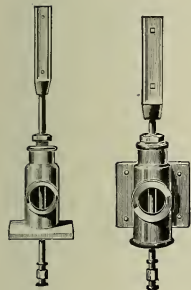


Fig. 216

Fig. 217

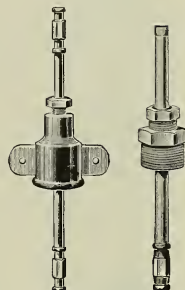


Fig. 707 Fig. 1007

Fig. 707. Sizes, Prices, Etc. Fig. 1007. Sizes, Prices, Etc.

Size Pipe	L'gth Stroke	Well Rod	Cipher	Price	Size Pipe	L'gth Stroke	Well Rod	Cipher	Price
1 in.	12 in.	7-16 in.	Lumrig	\$3.00	1 in.	12 in.	7-16 in.	Lumsin	\$ 4.00
1½ "	12 "	7-16 "	Lumroe	3.00	1½ "	12 "	7-16 "	Lumsod	4.00
1½ "	12 "	7-16 "	Lumrum	3.00	1½ "	12 "	7-16 "	Lumsus	5.00
2 "	12 "	½ "	Lumryl	3.00	2 "	12 "	7-16 "	Lumtim	6.00
2½ "	12 "	½ "	Lumsab	3.75	2½ "	12 "	7-16 "	Lumtim	7.50
					3 "	12 "	¾ "	Lumtope	10.00

Goulds Force Pump Head

With Wind Mill Top and Wood Lever

Fig. 1260 is offered as a very desirable Force Head for operating by wind mill or by hand. It is compact and strong. Has double guide for polished rod. With wind mill allows 10-inch stroke, for hand 5-inch stroke. A powerful leverage is afforded, making easy work. We regularly furnish tapped for 2-inch pipe, but can tap for 1½ or 1¼-inch if so ordered.

Fig. 1260. Size, Price, Etc.

Stroke	Suction	Discharge	Well Rod	Cipher	Price
10 in. Mill and 5 in. Hand	2 in. pipe	¾ in. hose and 1 in. pipe	7-16 in.	Lumtux	\$7.50

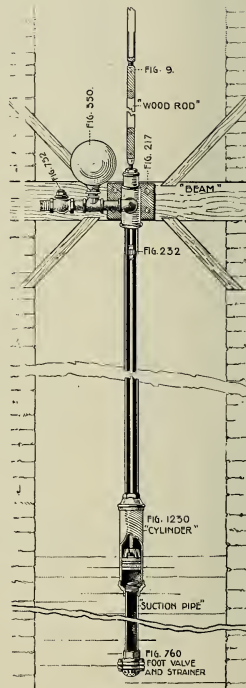
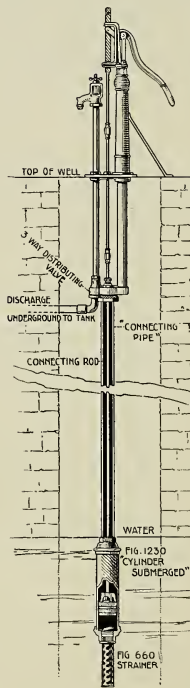
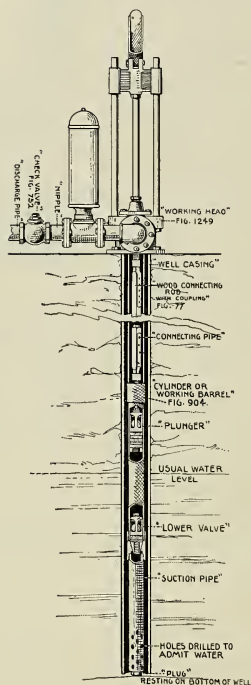
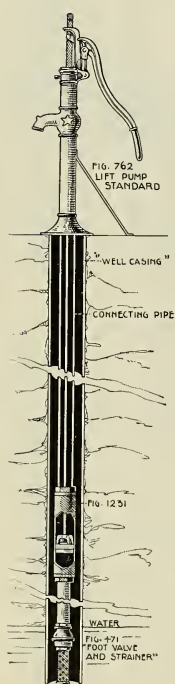
Cylinders like Figs. 1230, etc., pages 67 to 68 are required with this Working Head and cost extra.



Fig. 1260

Plans For Placing Working Heads, Cylinders, Etc.

Giving Technical Terms Used in Our Catalogue



Goulds "Universal" Bronze Valve and Seat

(Patent Applied For)

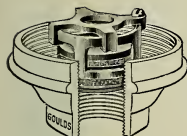


Fig. 1229
Shown in an "outside"
Cylinder attachment

Fig. 1229, "Universal" Bronze Valve and Seat, is interchangeable with leather valve in all of our Cylinders, both inside and outside capped. Dealers can carry in stock and effect change to suit demand. Our engravings show construction, and we assert there is not a simpler, more effective or durable Lower Valve made. The valve seat is made a part of the valve, saving the expense of separate brass valve seat.

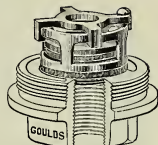


Fig. 1229
Shown in "inside"
Cylinder attachment

Fig. 1229. Sizes, Prices, Etc.

Diameter of Cylinders.....	2-2½ in.	2½-2¾-3 in.	3¼-3½ in.	4-4½ in.	5 in.	6 in.	8 in.
For Cylinders with attachments tapped	1 in.	1¼ in.	1½ in.	2 in.	2½ in.	3 in.	4 in.
Price Fig. 1229 Compl. (not including Cylinder attachment).....	\$.75	\$.75	\$ 1.00	\$ 1.50	\$ 3.75	\$ 5.00	\$ 6.00

Metal Lower Valve and Seat

For Outside Attachment Cylinders

Fig. 1390 represents our new Metal Lower Valve for Fig. 1230 Cylinders. When Outside Attachment Cylinders are wanted with Fig. 1390, add the word (Covers) to Cipher word for Cylinder.

Fig. 1390. Sizes, Prices, Etc.



Fig. 1390

Diameter Cylinder (inches).....	2½	2¾	3	3½	4
For Cylinders with attachments tapped.....	1¼ in.	1½ in.	1¾ in.	1½ in.	2 in.
Price.....	\$.40	\$.40	\$.40	\$.50	\$.75

Valve and Plunger Leathers, Etc.

Made of Pure Oak-Tanned Stock

Ring Packing—for Cylinders

Plunger Leather—not Crimped

Lower Valve Leather

Plunger Leather—Crimped



Sizes and Prices .

Size, Inches (Diameter of Cylinders).....	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	3¾	4	4½	5	6	8
Ring Packings, for Cylinders, each.....	.10	.10	.10	.10	.10	.10	.10	.15	.15	.15	.15	.20	.25	.30	\$0.45
Plunger Leathers, not Crimped, each.....	.15	.15	.15	.15	.15	.15	.15	.20	.20	.20	.20	.25	.30	.40	.60
Lower Valve Leathers, each.....	.15	.15	.15	.15	.15	.15	.15	.20	.20	.20	.20	.25	.40	.50	.75
Plunger Leathers, Crimped, each.....	.15	.15	.15	.15	.15	.15	.20	.25	.30	.35	.40	.45	.55	.75	1.25

Goulds Pump Cylinders or Working Barrels

Figs. 1230, 1231—10 1-2 Inches Long. "AA" Plunger and Leather Lower Valve



Fig. 1230
Outside
Attachment

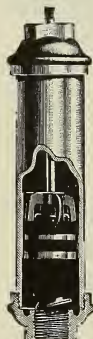


Fig. 1230
Inside
Attachment

Diameter and Length	Fig. 1230		Fig. 1231	Size Pipe	Well Rod	All Iron	BRASS BODY AND BRASS LINED IRON CAPS		All Brass
	Stroke	Capacity per Stroke					Brass Cage and Valve, Iron Follower Plunger	All Brass Plunger	
2 x 10 1/2 in.	6 in.	.08 gal.	6 in.	1 1/4 in.	3/4 in.	\$3.75	\$7.50	\$8.00	\$10.75
2 1/4 x 10 1/2 "	6 "	.10 "	6 "	1 1/4 "	3/4 "	4.00	7.75	8.25	11.00
2 1/2 x 10 1/2 "	6 "	.13 "	6 "	1 1/4 "	3/4 "	4.35	8.00	8.50	12.25
2 3/4 x 10 1/2 "	6 "	.15 "	6 "	1 1/4 "	3/4 "	4.70	8.50	9.00	12.75
3 x 10 1/2 "	6 "	.18 "	6 "	1 1/4 "	3/4 "	5.00	9.00	9.75	13.50
3 1/4 x 10 1/2 "	6 "	.21 "	6 "	1 1/2 "	3/4 "	6.00	10.50	11.75	14.75
3 1/2 x 10 1/2 "	6 "	.25 "	6 "	1 1/2 "	7-16 "	7.00	10.50	11.50	16.75
4 x 10 1/2 "	6 "	.32 "	6 "	2 "	7-16 "	9.00	13.00	15.50	21.50
4 1/2 x 10 1/2 "	6 "	.41 "	6 "	2 "	1/2 "	12.50	20.00	22.50	30.00
5 x 10 1/2 "	6 "	.51 "	6 "	2 1/2 "	1/2 "	16.50	26.50	30.00	40.00
6 x 10 1/2 "	6 "	.73 "	6 "	3 "	3/8 "	24.00	40.00	45.00	60.00

Figs. 1230, 1231—12, 14, 16 Inches Long, "BB" Plunger and Leather Lower Valve



Fig. 1231
Inside
Attachment

Diameter and Length	Fig. 1230		Fig. 1231	Size Pipe	Well Rod	All Iron	BRASS BODY AND BRASS LINED IRON CAPS		All Brass
	Stroke	Capacity per Stroke					Brass Cage and Valve, Iron Follower Plunger	All Brass Plunger	
2 x 12 in.	8 in.	.11 gal.	6 in.	1 1/4 in.	3/4 in.	\$5.50	\$8.00	\$9.25	\$11.25
2 1/4 x 12 "	8 "	.14 "	6 "	1 1/4 "	3/4 "	5.75	8.25	9.50	11.50
2 1/2 x 12 "	8 "	.17 "	6 "	1 1/4 "	3/4 "	6.00	8.50	9.75	12.75
2 3/4 x 12 "	8 "	.20 "	6 "	1 1/4 "	3/4 "	6.50	9.00	10.50	13.25
3 x 12 "	8 "	.24 "	6 "	1 1/2 "	3/4 "	7.00	9.50	11.00	14.00
3 1/4 x 12 "	8 "	.29 "	6 "	1 1/2 "	3/4 "	8.00	10.25	12.00	15.25
3 1/2 x 12 "	8 "	.33 "	6 "	1 1/2 "	7-16 "	9.00	11.25	13.75	17.50
4 x 12 "	8 "	.44 "	6 "	2 "	7-16 "	11.50	14.25	16.00	22.50
2 x 14 "	10 "	.14 "	8 "	1 "	3/8 "	6.00	8.50	9.75	13.00
2 1/4 x 14 "	10 "	.17 "	8 "	1 "	3/8 "	6.25	9.00	10.25	13.50
2 1/2 x 14 "	10 "	.21 "	8 "	1 1/4 "	3/8 "	6.50	9.25	10.50	14.75
2 3/4 x 14 "	10 "	.25 "	8 "	1 1/4 "	3/8 "	7.00	9.75	11.25	15.50
3 x 14 "	10 "	.30 "	8 "	1 1/2 "	3/8 "	7.50	10.25	11.75	16.25
3 1/4 x 14 "	10 "	.36 "	8 "	1 1/2 "	3/8 "	8.75	11.00	12.75	17.75
3 1/2 x 14 "	10 "	.41 "	8 "	1 1/2 "	7-16 "	10.00	12.25	14.75	21.00
4 x 14 "	10 "	.54 "	8 "	2 "	7-16 "	13.00	15.75	19.00	26.50
4 1/2 x 14 "	8 "	.55 "	6 "	2 "	1/2 "	17.50	24.00	28.00	36.00
5 x 14 "	8 "	.68 "	6 "	2 1/2 "	1/2 "	22.50	33.00	38.00	50.00
6 x 14 "	8 "	.98 "	6 "	3 "	3/8 "	33.50	50.00	56.00	70.00
2 x 16 "	12 "	.16 "	10 "	1 "	3/8 "	6.00	9.00	10.50	13.75
2 1/4 x 16 "	12 "	.21 "	10 "	1 "	3/8 "	6.50	9.75	11.25	14.50
2 1/2 x 16 "	12 "	.26 "	10 "	1 1/4 "	3/8 "	7.00	10.25	11.75	16.00
2 3/4 x 16 "	12 "	.31 "	10 "	1 1/4 "	3/8 "	7.50	10.75	12.25	16.50
3 x 16 "	12 "	.37 "	10 "	1 1/2 "	3/8 "	8.00	11.25	12.75	17.25
3 1/4 x 16 "	12 "	.43 "	10 "	1 1/2 "	3/8 "	9.75	12.00	14.00	19.00
3 1/2 x 16 "	12 "	.50 "	10 "	1 1/2 "	7-16 "	11.25	13.50	16.00	22.25
4 x 16 "	12 "	.65 "	10 "	2 "	7-16 "	14.50	17.50	20.50	28.00
4 1/2 x 16 "	10 "	.69 "	8 "	2 "	1/2 "	18.50	25.00	30.50	38.75
5 x 16 "	10 "	.85 "	8 "	2 1/2 "	1/2 "	25.00	35.00	42.00	53.50
6 x 16 "	10 "	1.22 "	8 "	3 "	3/8 "	37.50	55.00	62.00	75.00

Longer lengths and "Cipher" on next page.

*Fig. 1231 capacities are less than Fig. 1230 in proportion to the shortened stroke.



Fig. 1231
Outside
Attachment

Goulds Pump Cylinders or Working Barrels

Figs. 1230, 1231—18 Inches Long. "BB" Plunger and Leather Lower Valve

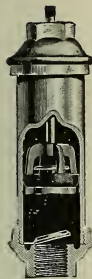


Fig. 1230

Outside
Attachment

Diameter and Length	FIG. 1230		FIG. 1231	Size Pipe	Well Rod	All Iron	BRASS BODY AND BRASS LINED, IRON CAPS		All Brass
	Stroke	Capacity per Stroke					Brass Cage and Valve Iron Follower Plunger	All Brass Plunger	
1½ x 18 in.	14 in.	.11 gal.	12 in.	1 in.	¾ in.			\$11.00	\$14.25
1¾ x 18 "	"	.15 "	12 "	1 "	¾ "			11.00	14.25
2 x 18 "	"	.19 "	12 "	1 ¼ "	¾ "			11.00	14.25
2 ¼ x 18 "	"	.24 "	12 "	1 ½ "	¾ "			12.00	15.25
2 ½ x 18 "	"	.30 "	12 "	1 ¾ "	¾ "	\$7.50	\$11.25	12.75	17.00
3 x 18 "	"	.36 "	12 "	1 ¾ "	¾ "	8.00	11.75	13.25	17.50
3 ½ x 18 "	"	.43 "	12 "	1 ¾ "	¾ "	8.50	12.25	13.75	18.25
4 x 18 "	"	.58 "	12 "	1 ½ "	7-16 "	12.50	14.75	17.25	23.50
4 ½ x 18 "	"	.65 "	10 "	1 ½ "	7-16 "	16.00	19.25	22.25	29.75
5 x 18 "	"	.82 "	10 "	2 "	½ "	22.50	30.00	35.00	43.25
5 ½ x 18 "	"	1.02 "	10 "	2 ½ "	½ "	30.00	40.00	47.00	58.50
6 x 18 "	"	1.47 "	10 "	3 "	¾ "	42.50	60.00	67.00	80.00



Fig. 1231

Inside
Attachment

Figs. 1230, 1231—20 and 22 Inches Long. "BB" Plunger and Leather Lower Valve



Fig. 1230

Outside
Attachment

Diameter and Length	FIG. 1230		FIG. 1231	Size Pipe	Well Rod	Brass Body All Brass Plunger	All Brass
	Stroke	Capacity per Stroke					
1½ x 20 in.	16 in.	.12 gal.	14 in.	1 in.	¾ in.	\$11.50	\$14.75
1¾ x 20 "	"	.16 "	14 "	1 "	¾ "	11.50	14.75
2 x 20 "	"	.21 "	14 "	1 ¼ "	¾ "	11.50	14.75
2 ¼ x 20 "	"	.27 "	14 "	1 ½ "	¾ "	12.75	16.00
2 ½ x 20 "	"	.34 "	14 "	1 ¾ "	¾ "	13.50	17.75
3 x 20 "	"	.41 "	14 "	1 ¾ "	¾ "	14.25	18.50
3 ½ x 20 "	"	.49 "	14 "	1 ¾ "	¾ "	14.75	19.25
3 ¾ x 20 "	"	.57 "	14 "	1 ½ "	¾ "	16.00	21.00
3 ½ x 20 "	"	.66 "	14 "	1 ½ "	7-16 "	19.00	25.25
4 x 20 "	"	.87 "	14 "	2 "	7-16 "	24.00	31.50
4 ½ x 20 "	"	.96 "	12 "	2 "	½ "	39.50	47.75
5 x 20 "	"	1.19 "	12 "	2 ½ "	½ "	52.00	63.50
5 ½ x 20 "	"	1.47 "	10 "	3 "	¾ "	72.00	85.00
6 x 20 "	"	.19 "	16 "	1 "	¾ "	12.00	15.25
2 x 22 "	"	.25 "	16 "	1 ¼ "	¾ "	12.00	15.25
2 ¼ x 22 "	"	.31 "	16 "	1 ½ "	¾ "	13.50	17.75
2 ½ x 22 "	"	.38 "	16 "	1 ¾ "	¾ "	14.25	18.50
3 x 22 "	"	.46 "	16 "	1 ¾ "	¾ "	15.00	19.25
3 ½ x 22 "	"	.55 "	16 "	1 ¾ "	¾ "	15.75	20.25
3 ¾ x 22 "	"	.75 "	16 "	1 ½ "	7-16 "	21.00	27.25
4 x 22 "	"	.93 "	15 "	2 "	7-16 "	25.75	33.25
4 ½ x 22 "	"	1.10 "	14 "	2 "	¾ "	43.00	52.25
5 x 22 "	"	1.36 "	14 "	2 ½ "	¾ "	57.00	68.50
5 ½ x 22 "	"	1.96 "	14 "	3 "	¾ "	77.00	90.00
6 x 22 "	"	2.61 "	10 "	4 "	¾ "	154.00	180.00



Fig. 1231

Inside
Attachment

*Cipher—Halgob, Fig. 1230, All Iron.
" Halgub, " 1230, Brass-Lined.
" Harfoot, " 1230, Brass Body.
" Harduc, " 1230, All Brass.

*Cipher—Hauma, Fig. 1231, All Iron.
" Haumic, " 1231, Brass-Lined.
" Haumon, " 1231, Brass Body.
" Haumud, " 1231, All Brass.

*In addition always specify diameter and length of Cylinder Body.

Goulds Pump Cylinders or Working Barrels

Fig. 1235—10½ Inches Long. "AA" Plunger and "Universal" Bronze Valve and Seat



Fig. 1235
Outside
Attachment



Fig. 1235
Inside
Attachment

Diameter and Length	FIG. 1235		Size Pipe	Well Rod	All Iron	BRASS BODY AND BRASS LINED IRON CAPS		All Brass
	Stroke	Capacity per Stroke				Brass Cage and Valve, Iron Follower Plunger	All Brass Plunger	
2 x 10½ in.	6 in.	.08 gals.	1¼ in.	¾ in.	\$5.50	\$8.75	\$9.25	\$12.00
2¼ x 10½ "	6 "	.10 "	1½ "	¾ "	5.75	9.00	9.50	12.25
2½ x 10½ "	6 "	.13 "	1½ "	¾ "	6.10	9.25	9.75	13.50
2¾ x 10½ "	6 "	.15 "	1½ "	¾ "	6.45	9.75	10.25	14.00
3 x 10½ "	6 "	.18 "	1½ "	¾ "	6.75	10.25	11.00	14.75
3¼ x 10½ "	6 "	.21 "	1½ "	¾ "	8.25	11.50	12.25	16.50
3½ x 10½ "	6 "	.25 "	1½ "	¾ "	9.25	12.25	13.25	18.50
4 x 10½ "	6 "	.32 "	2 "	7-16 "	12.50	15.50	18.00	24.00

Figs. 1235, 1236—12, 14, 16 and 18 Inches Long. "BB" Plunger and "Universal" Bronze Valve and Seat

Diameter and Length	Fig. 1235		Fig. 1236		Size Pipe	Well Rod	All Iron	BRASS BODY AND BRASS LINED IRON CAPS		All Brass
	Stroke	Capacity per Stroke	Stroke					Brass Cage and Valve, Iron Fol. Plunger	All Brass Plunger	
2 x 12 in.	Made only in Fig. 1236.	.10 gals.	6 in.	1 1/4 in.	3/4 in.	\$7.25	\$9.25	\$10.50	\$12.50	
2 1/4 x 12 "		.12 "	6 "	1 1/2 "	3/4 "	7.50	9.50	10.75	12.75	
2 1/2 x 12 "		.15 "	6 "	1 1/2 "	3/4 "	7.75	9.75	11.00	14.00	
2 3/4 x 12 "		.18 "	6 "	1 1/2 "	3/4 "	8.25	10.25	11.75	14.50	
3 x 12 "		.21 "	6 "	1 1/2 "	3/4 "	8.75	10.75	12.25	15.25	
3 1/4 x 12 "		.25 "	6 "	1 1/2 "	3/4 "	10.25	12.00	13.75	17.00	
3 1/2 x 12 "		.29 "	6 "	1 1/2 "	3/4 "	11.25	13.00	15.50	19.25	
4 x 12 "		.38 "	6 "	1 1/2 "	3/4 "	15.00	16.75	20.50	25.00	
2 x 14 in.	Made only in Fig. 1235.	.10 "	8 in.	1 "	3/4 "	7.75	9.75	11.00	14.25	
2 1/4 x 14 "		.13 "	8 in.	1 "	3/4 "	8.00	10.25	11.50	14.75	
2 1/2 x 14 "		.17 "	8 in.	1 1/4 "	3/4 "	8.25	10.50	11.75	16.00	
2 3/4 x 14 "		.20 "	8 in.	1 1/4 "	3/4 "	8.75	11.00	12.50	16.75	
3 x 14 "		.24 "	8 in.	1 1/4 "	3/4 "	9.25	11.50	13.00	17.50	
3 1/4 x 14 "		.28 "	8 in.	1 1/2 "	3/4 "	11.00	12.75	14.50	19.50	
3 1/2 x 14 "		.33 "	8 in.	1 1/2 "	3/4 "	12.25	14.00	16.50	22.75	
4 x 14 "		.43 "	8 in.	2 "	7-16 "	16.50	18.25	21.50	29.00	
4 1/4 x 14 "		.55 "	8 in.	2 "	7-16 "	21.00	26.50	30.50	38.50	
2 x 16 in.		.14 "	8 in.	1 "	3/4 "	7.75	10.25	11.75	15.00	
2 1/4 x 16 "		.17 "	8 in.	1 "	3/4 "	8.25	11.00	12.50	15.75	
2 1/2 x 16 "		.21 "	8 in.	1 1/4 "	3/4 "	8.75	11.50	13.00	17.25	
2 3/4 x 16 "		.25 "	8 in.	1 1/4 "	3/4 "	9.25	12.00	13.50	17.75	
3 x 16 "		.30 "	8 in.	1 1/4 "	3/4 "	9.75	12.50	14.00	18.50	
3 1/4 x 16 "		.36 "	8 in.	1 1/2 "	3/4 "	12.00	13.75	15.75	20.75	
3 1/2 x 16 "		.41 "	8 in.	1 1/2 "	3/4 "	13.50	15.25	17.75	24.00	
4 x 16 "		.54 "	8 in.	2 "	7-16 "	18.00	20.00	23.00	30.50	
4 1/4 x 16 "		.69 "	8 in.	2 "	7-16 "	22.00	27.50	33.00	41.25	
2 x 18 in.		.16 "	10 in.	1 "	3/4 "	8.50	10.75	12.25	15.50	
2 1/4 x 18 "		.21 "	10 in.	1 "	3/4 "	8.75	11.75	13.25	16.50	
2 1/2 x 18 "	.26 "	10 in.	1 1/4 "	3/4 "	9.25	12.50	14.00	18.25		
2 3/4 x 18 "	.31 "	10 in.	1 1/4 "	3/4 "	9.75	13.00	14.50	18.75		
3 x 18 "	.37 "	10 in.	1 1/4 "	3/4 "	10.25	13.50	15.00	19.50		
3 1/4 x 18 "	.43 "	10 in.	1 1/2 "	3/4 "	13.00	14.75	16.75	21.75		
3 1/2 x 18 "	.50 "	10 in.	1 1/2 "	3/4 "	14.75	16.50	19.00	25.25		
4 x 18 "	.65 "	10 in.	2 "	7-16 "	19.50	21.75	24.75	32.25		
4 1/4 x 18 "	.83 "	10 in.	2 "	7-16 "	26.00	32.50	37.50	45.75		
5 x 18 "	1.02 "	10 in.	2 1/2 "	7-16 "	33.00	45.00	52.00	63.50		
6 x 18 "	1.47 "	10 in.	3 "	7-16 "	45.00	65.00	74.50	87.50		

Longer lengths and "Cipher" on next page.



Fig. 1236
Inside
Attachment



Fig. 1236
Outside
Attachment

Goulds Pump Cylinders or Working Barrels

Figs. 1235, 1236—20, 22 Inches Long. "BB" Plunger and "Universal" Bronze Valve and Seat



Fig. 1235
Outside
Attachment

Diameter and Length	FIG. 1235		FIG. 1236		Size Pipe	Well Rod	Brass Body All Brass Plunger	All Brass
	Stroke	Capacity Per Stroke	Stroke					
2 x 20 in.	14 in.	.19 gals.	12 in.	1¼ in.	¾ in.		\$12.75	\$16.00
2¼ x 20 "	14 "	.24 "	12 "	1¼ "	¾ "		14.00	17.25
2½ x 20 "	14 "	.29 "	12 "	1¼ "	¾ "		14.75	19.00
2¾ x 20 "	14 "	.36 "	12 "	1¼ "	¾ "		15.50	19.75
3 x 20 "	14 "	.42 "	12 "	1¼ "	¾ "		16.00	20.50
3¼ x 20 "	14 "	.50 "	12 "	1½ "	¾ "		17.75	22.75
3½ x 20 "	14 "	.58 "	12 "	1½ "	7-16 "		20.75	27.00
4 x 20 "	14 "	.76 "	12 "	2 "	7-16 "		26.50	34.00
4½ x 20 "	12 "	.83 "	10 "	2 "	½ "		42.00	50.25
5 x 20 "	12 "	1.02 "	10 "	2½ "	½ "		57.00	68.50
6 x 20 "	10 "	1.22 "	8 "	3 "	¾ "		79.50	92.50
1¾ x 22 "	16 "	.17 "	14 "	1 "	¾ "		13.25	16.50
2 x 22 "	16 "	.22 "	14 "	1¼ "	¾ "		13.25	16.50
2¼ x 22 "	16 "	.28 "	14 "	1¼ "	¾ "		14.75	18.00
2½ x 22 "	16 "	.34 "	14 "	1¼ "	¾ "		15.50	19.75
2¾ x 22 "	16 "	.41 "	14 "	1¼ "	¾ "		16.25	20.50
3 x 22 "	16 "	.49 "	14 "	1¼ "	¾ "		17.00	21.50
3¼ x 22 "	16 "	.67 "	14 "	1½ "	7-16 "		22.75	29.00
4 x 22 "	14 "	.76 "	12 "	2 "	7-16 "		28.25	35.75
4½ x 22 "	14 "	.96 "	12 "	2 "	¾ "		45.50	54.75
5 x 22 "	14 "	1.19 "	12 "	2½ "	¾ "		62.00	73.50
6 x 22 "	14 "	1.71 "	12 "	3 "	¾ "		84.50	97.50
8 x 22 "	10 "	2.17 "	8 "	4 "	¾ "		164.00	190.00



Fig. 1236
Inside
Attachment

*Cipher—Haupun, Fig. 1235, All Iron.
Henbid, " 1235, Brass-Lined.
Henbifa, " 1235, Brass Body.
Henboc, " 1235, All Brass.

*Cipher—Henbur, Fig. 1236, All Iron.
Henbust, " 1236, Brass-Lined.
Hencab, " 1236, Brass Body.
Hencare, " 1236, All Brass.

*In addition always specify Diameter and Length of Cylinder Body.

Table Showing Extreme Outside Diameter of Cylinders

Inside Diameter, Inches	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	4	4 1/2	5	6	8
EXTREME OUTSIDE DIAMETER												
Figs. 1230 and 1235, Iron and Brass Lined	3 1/8	3 7/8	3 11/8	3 15/8	4 1/8	4 7/8	4 11/8	5 1/4	5 7/8	6 1/2	7 1/2	9 3/4
Figs. 1230 and 1235, Brass Body	2 3/8	2 7/8	3 1/8	3 5/8	3 3/4	3 7/8	4 1/8	4 11/8	5 1/2	6	7	
Figs. 1231 and 1236, Iron and Brass Lined	2 3/8	2 7/8	3 1/8	3 5/8	3 3/4	3 7/8	4 1/8	4 11/8	5 1/2	5 3/4	6 3/4	8 3/4
Figs. 1231 and 1236, Brass Body	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4 1/4	4 7/8	5 3/8	6 3/8	8 3/8

Goulds Bolt Attachment Cylinders

Fig. 1267, 10½ Inches Long. "AA" Plunger and Leather Lower Valve

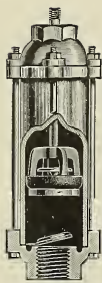


Fig. 1267
Leather
Lower
Valve

Diameter and Length	Stroke	Capacity per Stroke	Size Pipe	Well Rod	Iron	Brass Lined Brass Cage and Valve Plunger	Brass Body All Brass Plunger	All Brass
2½ x 10½ in.	6 in.	.13 gals.	1¼ in.	¾ in.	\$4.35	\$8.00	\$8.50	\$12.25
3 x 10½ "	6 "	.18 "	1½ "	¾ "	5.00	9.00	9.75	13.50
3½ x 10½ "	6 "	.25 "	1½ "	7-16 "	7.00	10.50	11.50	16.75
4 x 10½ "	6 "	.32 "	2 "	7-16 "	9.00	13.00	15.50	21.50

Fig. 1267—12, 14, 16, 20 Inches Long. "BB" Plunger and Leather Lower Valve

2½ x 12 in.	8 in.	.17 gals.	1¼ in.	¾ in.	\$6.00	\$8.50	\$9.75	\$12.75
3 x 12 "	8 "	.24 "	1½ "	¾ "	7.00	9.50	11.00	14.00
3½ x 12 "	8 "	.33 "	1½ "	7-16 "	9.00	11.25	13.75	17.50
4 x 12 "	8 "	.44 "	2 "	7-16 "	11.50	14.25	18.00	22.50
2½ x 14 "	10 "	.21 "	1¼ "	¾ "	6.50	9.25	10.50	14.75
3 x 14 "	10 "	.30 "	1½ "	¾ "	7.50	10.25	11.75	16.25
3½ x 14 "	10 "	.41 "	1½ "	7-16 "	10.00	12.25	14.75	21.00
4 x 14 "	10 "	.54 "	2 "	7-16 "	13.00	15.75	19.00	26.50
2½ x 16 "	12 "	.26 "	1¼ "	¾ "	7.00	10.25	11.75	16.00
3 x 16 "	12 "	.37 "	1½ "	¾ "	8.00	11.25	12.75	17.25
3½ x 16 "	12 "	.50 "	1½ "	7-16 "	11.25	13.50	16.00	22.25
4 x 16 "	12 "	.65 "	2 "	7-16 "	14.50	17.50	20.50	28.00
2½ x 20 "	16 "	.34 "	1¼ "	¾ "	.....	.....	13.50	17.75
3 x 20 "	16 "	.49 "	1½ "	¾ "	.....	.....	14.75	19.25
3½ x 20 "	16 "	.66 "	1½ "	7-16 "	.....	.....	19.00	25.25
4 x 20 "	16 "	.87 "	2 "	7-16 "	.....	.....	24.00	31.50



Fig. 1267

Fig. 1268, 10½ Inches Long. "AA" Plunger and "Universal" Bronze Valve and Seat

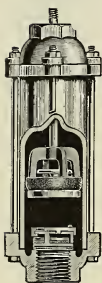


Fig. 1268
Metal
Lower
Valve

2½ x 10½ in.	6 in.	.13 gals.	1¼ in.	¾ in.	\$6.10	\$9.25	\$9.75	\$13.50
3 x 10½ "	6 "	.18 "	1½ "	¾ "	6.75	10.25	11.00	14.75
3½ x 10½ "	6 "	.25 "	1½ "	7-16 "	9.25	12.25	13.25	18.50
4 x 10½ "	6 "	.32 "	2 "	7-16 "	12.50	15.50	18.00	24.00

Fig. 1268—12, 16, 18 and 20 Inches Long. "BB" Plunger and "Universal" Bronze Valve and Seat

2½ x 12 in.	7 in.	.15 gals.	1¼ in.	¾ in.	\$7.75	\$9.75	\$11.00	\$14.00
3 x 12 "	7 "	.21 "	1½ "	¾ "	8.75	10.75	12.25	15.25
3½ x 12 "	7 "	.29 "	1½ "	7-16 "	11.25	13.00	15.50	19.25
4 x 12 "	7 "	.38 "	2 "	7-16 "	15.00	16.75	20.50	25.00
2½ x 16 "	10 "	.21 "	1¼ "	¾ "	8.75	11.50	13.00	17.25
3 x 16 "	10 "	.30 "	1½ "	¾ "	9.75	12.50	14.00	18.50
3½ x 16 "	10 "	.41 "	1½ "	7-16 "	13.50	15.25	17.75	24.00
4 x 16 "	10 "	.54 "	2 "	7-16 "	18.00	20.00	23.00	30.50
2½ x 18 "	12 "	.26 "	1¼ "	¾ "	9.25	12.50	14.00	18.25
3 x 18 "	12 "	.37 "	1½ "	¾ "	10.25	13.50	15.00	19.50
3½ x 18 "	12 "	.50 "	1½ "	7-16 "	14.75	16.50	19.00	25.25
4 x 18 "	12 "	.65 "	2 "	7-16 "	19.50	21.75	24.75	32.25
2½ x 20 "	14 "	.29 "	1¼ "	¾ "	.....	.....	14.75	19.00
3 x 20 "	14 "	.42 "	1½ "	¾ "	.....	.....	16.00	20.50
3½ x 20 "	14 "	.58 "	1½ "	7-16 "	.....	.....	20.75	27.00
4 x 20 "	14 "	.76 "	2 "	7-16 "	.....	.....	26.50	34.00

*Cipher—Haumvo, Fig. 1267, Iron.

" Haupid, Fig. 1267, Brass Body.

Hencil, Fig. 1268, Iron.

Hencyx, Fig. 1268, Brass Body.

*In addition always specify Diameter and Length of Cylinder Body.

Haupa, Fig. 1267, Brass-Lined.

Haupod, Fig. 1267, All Brass.

Hencud, Fig. 1268, Brass-Lined.

Henciad, Fig. 1268, All Brass.



Fig. 1268

Goulds Pump Cylinders or Working Barrels

Fig. 621—Double-Acting Pump Cylinder. "H" Piston

No.	Size	Stroke	Capacity per Stroke	Fitted for	Well Rod	IRON		BRASS LINED	
						Cipher	Price	Cipher	Price
1	2¼ x 10½ in.	6 in.	.10 gal.	1¼ in. pipe	¾ in.	Quibe	\$10.00	Dotesm	\$12.50
4	3 x 10½ "	6 "	.18 "	1½ "	¾ "	Quick	12.00	Doteto	14.75
8	4 x 10½ "	6 "	.32 "	2 "	¾ "	Quid	14.00	Doteux	17.50
8	4 x 14 "	10 "	.54 "	2 "	¾ "	Quiet	20.00	Dotfab	25.00

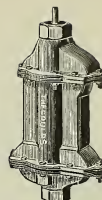


Fig. 621

Fig. 559½ Deep Well Pump Cylinder With Air Chamber. "AA" Plunger

No.	Size	Stroke	Capacity per Stroke	Fitted for	Well Rod	IRON	
						Cipher	Price
4	3 x 12 in.	8 in.	.24 gal.	1¼ in. pipe	7-16 in.	Lawn	\$9.00
8	4 x 12 "	8 "	.43 "	2 "	½ "	Laxd	11.50



Fig. 559½

Fig. 548—Deep Well Pump Cylinder With Air Chamber. "BB" Plunger

Size	Stroke	Capacity per Stroke	Fitted for	Well Rod	IRON		BRASS BODY	
					Cipher	Price	Cipher	Price
2¼ x 16 in.	9 in.	.23 gal.	1¼ in. pipe	7-16 in.	Laper	\$11.00	Grujag	\$20.00
3 x 16 "	9 "	.27 "	1½ "	7-16 "	Larde	11.50	Gushwa	20.75
3½ x 16 "	9 "	.37 "	1½ "	7-16 "	Lash	12.50	Halgar	25.75
4 x 16 "	9 "	.49 "	2 "	½ "	Late	14.00	Halgib	30.00

All Brass Air Chamber furnished when so ordered at extra charge.

Fig. 618—Bolted Flange Attachment Cylinder

Size	Stroke	Capacity per Stroke	Fitted for	Well Rod	IRON		BRASS BODY, ALL BRASS PLUNGER	
					Cipher	Price	Cipher	Price
3 x 14 in.	10 in.	30 gal.	1½ in. pipe	¾ in.	Gruhfx	\$15.00	Gruhge	\$28.50
3½ x 14 "	10 "	.41 "	2 "	7-16 "	Hendock	17.00	Henduga	36.00
4 x 14 "	10 "	.51 "	2 "	7-16 "	Hendodu	21.00	Hendvan	55.00

All Brass Cylinders to order.



Fig. 548



Fig. 618
Flange
Attachment



Goulds Brass Artesian Deep Well Cylinder

Removable Plunger and Check Valve

Fig. 904, Brass Deep Well Pump, is intended for use with our Differential Working Heads, illustrated and described on pages 112 to 115 inclusive. The working barrel or cylinder is seamless drawn brass tubing with cast bronze top and bottom attachments, which are threaded for standard wrought-iron pipe connections. At the bottom a suction pipe and strainer may be attached. The plunger and check are bronze with bronze ball valves. The plunger has cup leather packings. The plunger and lower valve can be inserted or removed through the connecting pipe, which is larger diameter than the bore of cylinder. Wood sucker rods with forged couplings (see page 77) are recommended. The valve stems and sucker rod couplings are all made with standard pin threads as given page 77.

The price includes the Fig. 905, Deep Well Pump, complete with plunger and check valves. For prices of sucker rods and couplings, see page 77.

Fig. 904

Fig. 904. Sizes, Capacities, Etc.

Inside Diameter	Stroke	Capacity Per Stroke	Usual Speed and Capacity per Minute	DIMENSIONS		Top and Bottom Connecting Pipes	Square Wood Sucker Rod	Cipher	All Brass
				Length Pump Chamber	Maximum Outside Diameter Caps				
1 3/8 in.	10 in.	.06 gal.	35 revs., 2.1 gals.	26 in.	2 3/8 in.	1 1/2 in.	*	Chikout	\$15.00
1 3/8 "	16 "	.10 "	30 " 3.0 "	32 "	2 3/8 "	1 1/2 "	*	Wheis	15.00
1 3/4 "	10 "	.10 "	35 " 3.5 "	26 "	2 7/8 "	2 "	1 in.	Gratit	17.50
1 3/4 "	16 "	.16 "	30 " 4.8 "	32 "	2 7/8 "	2 "	1 "	Whiff	19.00
2 1/4 "	10 "	.172 "	35 " 6.02 "	26 "	3 1/2 "	2 1/2 "	1 1/4 "	Dumpol	26.00
2 1/4 "	16 "	.275 "	30 " 8.25 "	32 "	3 1/2 "	2 1/2 "	1 1/4 "	Whigy	28.00
2 3/4 "	10 "	.257 "	35 " 8.90 "	26 "	3 3/8 "	3 "	1 1/2 "	Dumpy	34.00
2 3/4 "	14 "	.359 "	30 " 10.80 "	30 "	3 3/8 "	3 "	1 1/2 "	Endmouh	36.00
2 3/4 "	16 "	.411 "	30 " 12.33 "	32 "	3 3/8 "	3 "	1 1/2 "	Whilom	36.00
2 3/4 "	20 "	.514 "	25 " 12.85 "	40 "	3 3/8 "	3 "	1 1/2 "	Whihz	38.00
3 1/4 "	10 "	.359 "	35 " 12.50 "	30 "	4 1/2 "	3 1/2 "	2 "	Dumpyb	45.00
3 1/4 "	14 "	.593 "	30 " 15. "	34 "	4 1/2 "	3 1/2 "	2 "	Endmove	48.00
3 1/4 "	16 "	.574 "	30 " 17.22 "	36 "	4 1/2 "	3 1/2 "	2 "	Whim	48.00
3 1/4 "	20 "	.718 "	25 " 17.95 "	44 "	4 1/2 "	3 1/2 "	2 "	Whimas	52.00
3 1/4 "	24 "	.862 "	25 " 21.55 "	44 "	4 1/2 "	3 1/2 "	2 "	Whine	52.00
3 1/4 "	30 "	1.077 "	20 " 21.54 "	50 "	4 1/2 "	3 1/2 "	2 "	Whirla	55.00
3 1/4 "	36 "	1.29 "	20 " 25.80 "	56 "	4 1/2 "	3 1/2 "	2 "	Whoop	58.00

*Fig. 904 1 3/8 Diameter takes 3/8 Iron Pipe for Well Rod.

Fig. 904. Sizes, Capacities, Etc., (Continued)

Inside Diameter	Stroke	Capacity per Stroke	Usual Speed and Capacity per Minute	Length Pump Chamber	Maximum Outside Diameter Caps	Top and Bottom Connecting Pipes	Square Wood Sucker Rod	Cipher	All Brass
3/4 in.	10 in.	.478 gal.	35 revs., 16.73 gals.	34 in.	5 1/8 in.	4 in.	2 1/4 in.	Dumgeel	\$67.50
3/4 "	14 "	.660 "	30 " 20. "	38 "	5 1/8 "	4 "	2 1/4 "	Endmuba	70.00
3/4 "	16 "	.764 "	30 " 22.92 "	40 "	5 1/8 "	4 "	2 1/4 "	Zylonka	70.00
3/4 "	20 "	.950 "	25 " 23.90 "	48 "	5 1/8 "	4 "	2 1/4 "	Whinger	75.00
3/4 "	24 "	1.14 "	25 " 28.50 "	48 "	5 1/8 "	4 "	2 1/4 "	Whiners	75.00
3/4 "	30 "	1.43 "	20 " 28.86 "	54 "	5 1/8 "	4 "	2 1/4 "	Whisk	80.00
3/4 "	36 "	1.721 "	20 " 34.42 "	60 "	5 1/8 "	4 "	2 1/4 "	Wick	85.00
4 1/4 "	10 "	.614 "	35 " 21.49 "	34 "	5 3/4 "	4 1/2 "	2 1/2 "	Dumqued	87.50
4 1/4 "	14 "	.850 "	30 " 25.7 "	38 "	5 3/4 "	4 1/2 "	2 1/2 "	Endmud	90.00
4 1/4 "	16 "	.982 "	30 " 29.46 "	40 "	5 3/4 "	4 1/2 "	2 1/2 "	Zylonle	90.00
4 1/4 "	20 "	1.228 "	25 " 30.70 "	48 "	5 3/4 "	4 1/2 "	2 1/2 "	Whirgh	95.00
4 1/4 "	24 "	1.47 "	25 " 36.75 "	48 "	5 3/4 "	4 1/2 "	2 1/2 "	Whinny	95.00
4 1/4 "	30 "	1.84 "	20 " 36.80 "	54 "	5 3/4 "	4 1/2 "	2 1/2 "	Whisto	100.00
4 1/4 "	36 "	2.211 "	20 " 44.20 "	60 "	5 3/4 "	4 1/2 "	2 1/2 "	Widen	105.00
4 3/4 "	10 "	.767 "	35 " 26.84 "	34 "	6 1/4 "	5 "	3 "	Dumquiel	120.00
4 3/4 "	14 "	1.07 "	30 " 32.1 "	38 "	6 1/4 "	5 "	3 "	Endmuck	127.50
4 3/4 "	16 "	1.22 "	30 " 36.81 "	40 "	6 1/4 "	5 "	3 "	Zylonm	127.50
4 3/4 "	20 "	1.534 "	25 " 38.30 "	48 "	6 1/4 "	5 "	3 "	Whistig	135.00
4 3/4 "	24 "	1.84 "	25 " 46.02 "	48 "	6 1/4 "	5 "	3 "	Whippe	135.00
4 3/4 "	30 "	2.30 "	20 " 46. "	54 "	6 1/4 "	5 "	3 "	Whita	142.50
4 3/4 "	36 "	2.76 "	20 " 55.20 "	60 "	6 1/4 "	5 "	3 "	Wield	150.00
5 3/4 "	10 "	1.12 "	35 " 39.20 "	34 "	7 1/4 "	6 "	3 1/2 "	Dubame	172.50
5 3/4 "	14 "	1.57 "	30 " 47.1 "	38 "	7 1/4 "	6 "	3 1/2 "	Endnab	180.00
5 3/4 "	16 "	1.78 "	30 " 53.70 "	40 "	7 1/4 "	6 "	3 1/2 "	Zylonna	180.00
5 3/4 "	20 "	2.248 "	25 " 56.20 "	48 "	7 1/4 "	6 "	3 1/2 "	Whpus	195.00
5 3/4 "	24 "	2.69 "	25 " 67.25 "	48 "	7 1/4 "	6 "	3 1/2 "	Dufabl	195.00
5 3/4 "	30 "	3.372 "	20 " 67.44 "	54 "	7 1/4 "	6 "	3 1/2 "	Whiz	207.50
5 3/4 "	36 "	4.014 "	20 " 80.80 "	60 "	7 1/4 "	6 "	3 1/2 "	Wight	217.50
6 3/4 "	16 "	2.479 "	30 " 74.37 "	40 "	8 1/4 "	7 "	4 "	Gratiew	280.00
6 3/4 "	24 "	3.716 "	25 " 92.9 "	48 "	8 1/4 "	7 "	4 "	Gratifa	300.00
6 3/4 "	30 "	4.646 "	20 " 92.92 "	54 "	8 1/4 "	7 "	4 "	Gratigu	320.00
6 3/4 "	36 "	5.576 "	20 " 111.52 "	60 "	8 1/4 "	7 "	4 "	Gratitha	335.00
7 3/4 "	16 "	3.26 "	30 " 97.80 "	40 "	9 1/2 "	8 "	5 "	Zylonoc	425.00
7 3/4 "	24 "	4.9 "	25 " 122.50 "	48 "	9 1/2 "	8 "	5 "	Willri	450.00
7 3/4 "	30 "	6.126 "	20 " 122.52 "	54 "	9 1/2 "	8 "	5 "	Dubal	480.00
7 3/4 "	36 "	7.34 "	20 " 146.80 "	60 "	9 1/2 "	8 "	5 "	Willga	500.00
8 3/4 "	16 "	4.104 "	30 " 124.92 "	52 "	11 "	9 "	5 1/2 "	Gratijo	685.00
8 3/4 "	24 "	6.247 "	25 " 156.17 "	60 "	11 "	9 "	5 1/2 "	Groomug	725.00
8 3/4 "	30 "	7.809 "	20 " 156.18 "	66 "	11 "	9 "	5 1/2 "	Groomva	775.00
8 3/4 "	36 "	9.37 "	20 " 187.40 "	72 "	11 "	9 "	5 1/2 "	Groomwo	825.00
9 1/2 "	24 "	7.34 "	25 " 183.50 "	78 "	12 "	10 "	6 "	Mamxat	915.00
9 1/2 "	30 "	9.18 "	20 " 183.60 "	84 "	12 "	10 "	6 "	Mamwa	955.00
9 1/2 "	36 "	11.02 "	20 " 220.40 "	90 "	12 "	10 "	6 "	Mamoz	1,090.00
11 1/2 "	24 "	10.77 "	25 " 269.25 "	78 "	14 "	12 "	7 1/4 "	Mamvid	1,150.00
11 1/2 "	30 "	13.47 "	20 " 269.40 "	84 "	14 "	12 "	7 1/4 "	Mamvae	1,200.00
11 1/2 "	36 "	16.16 "	20 " 323.20 "	90 "	14 "	12 "	7 1/4 "	Mamut	1,250.00



FIG. 904

Goulds Brass Artesian Well Cylinders

Removable Plunger and Check Valve

Fig. 1135, Gould's Brass Artesian Cylinder or Deep Well Pump, is designed for use in connection with any of our Pump Standards or Differential Working Heads. The shell or body is seamless-drawn brass tubing with cast bronze top and bottom attachments. The plunger and lower valves are bronze balls. The plunger is supplied with cup leather packings. The plunger or lower valves may be inserted or withdrawn through the connecting pipe without removing cylinder.

Wood sucker rods with forged couplings are recommended, as is also the use of valve rod to connect the plunger and sucker rod. Standard threads are on all parts and attachments. This is a very serviceable cylinder for many places where Fig. 904, pages 74 and 75, might prove too expensive.

The demand for a low-priced cylinder, something durable but not so heavy as our standard pattern (Fig. 904) has led us to design our Fig. 1135½. The body is seamless-drawn brass tubing with cast bronze attachments. The plunger and lower valves are of the spool type, one end being supplied with leather packing. The valves being invertable, make them either metallic or leather-faced, as service requires. The plunger has cup leather packings, and together with lower valve, may be withdrawn from the cylinder without disturbing pipe connections.

Fig. 1135
With
Ball Valves

Figs. 1135 and 1135½. Sizes, Prices, Etc.

Fig. 1135½
With
Spool Valves

Inside Diameter	Stroke	Capacity per Stroke	Usual Speed and Capacity per Minute	Outside Diameter of Caps	Connecting Pipes	Wood Sucker Rod	Fig. 1135	Fig. 1135½	Price Either
							Cipher	Cipher	
1¾ in.	10 in.	.104 gal.	35 revs. 3.5 gals.	2¾ in.	2 in.	1 in.	Flewal	Townm	\$17.50
1¾ "	16 "	.16 "	30 " 4.8 "	2¾ "	2 "	1 "	Flewb	Townoc	19.00
2¼ "	10 "	.172 "	35 " 6.02 "	3¼ "	2½ "	1¼ "	Flewend	Townul	26.00
2¼ "	16 "	.275 "	30 " 8.25 "	3¼ "	2½ "	1¼ "	Flewert	Townvy	28.00
2¾ "	10 "	.257 "	35 " 8.90 "	3¾ "	3 "	1½ "	Flewar	Townwt	34.00
2¾ "	16 "	.411 "	30 " 12.33 "	3¾ "	3 "	1½ "	Flewgab	Towobs	36.00
3¼ "	10 "	.36 "	35 " 12.56 "	4¾ "	3½ "	2 "	Flewgot	Towock	45.00
3¼ "	16 "	.574 "	30 " 17.22 "	4¾ "	3½ "	2 "	Flickus	Towoda	48.00
3¾ "	10 "	.478 "	35 " 16.73 "	5 "	4 "	2¼ "	Fliclab	Towocf	67.50
3¾ "	16 "	.764 "	30 " 22.92 "	5 "	4 "	2¼ "	Fliclit	Towofl	70.00
4¾ "	10 "	.767 "	35 " 26.84 "	6¼ "	5 "	3 "	Granhod	.....	120.00
4¾ "	16 "	1.22 "	30 " 36.81 "	6¼ "	5 "	3 "	Granhug	.....	127.50
5¾ "	10 "	1.12 "	35 " 39.20 "	7¼ "	6 "	3½ "	Gratufe	.....	172.50
5¾ "	16 "	1.78 "	30 " 53.40 "	7¼ "	6 "	3½ "	Gratibs	.....	180.00

When especially ordered we furnish with inside attachments for the smaller connecting pipes.



Sucker Rods, Couplings and Steel Substitutes

Goulds Connecting Parts for Single-Acting Deep Well Pumps

Fig. 1319

Fig. 68, Sucker Rod Couplings, are of forged wrought-iron, complete and ready to be attached to sucker rods. The price list includes all the sizes used with the deep well pumping apparatus described on the preceding pages.

Fig. 77, Wood Sucker Rods, are made of the best white ash. The prices include all necessary couplings attached.

Fig. 1319 represents our Steel Substitute or Pin Connection for Artesian Cylinders.

Square Wood Sucker Rods, Couplings and Steel Substitutes. Sizes, Prices, Etc.

Size Square Wood Sucker Rods	Couplings, etc., have Connecting Threads	Inside Diameter of Deep Well Pump	SUCKER ROD AND COUPLING, FIG. 77		COUPLING, FIG. 68		STEEL SUBSTITUTE FIG. 1319	
			Cipher	Price per Foot	Cipher	Price per Pair	Cipher	Price Each
1 in.	3/8 in. pin	1 3/4 in.	Eobamt	\$0.12 1/2	Eobase	\$1.00	Alternop	\$1.50
1 1/4 "	5/8 "	2 1/4 "	Easkoty	.15	Easimel	1.25	Alternaters	1.50
1 1/2 "	7/8 "	2 3/4 "	Easkub	.20	Easinab	1.50	Althomer	2.00
2 "	1 "	3 1/4 "	Easkyd	.25	Easinig	2.50	Altloquers	2.50
2 1/4 "	1 1/8 "	3 3/4 "	Easlaa	.40	Easinot	3.75	Altincog	3.00
2 1/2 "	1 1/4 "	4 1/4 "	Easlact	.50	Easinul	5.00	Altitudig	3.50
3 "	1 3/8 "	4 3/4 "	Easlib	.65	Easinynx	6.25	Altoeg	4.00
3 1/2 "	1 1/2 "	5 3/4 "	Easligs	.90	Easjab	8.75	Altometor	4.50
4 "	1 3/4 "	6 3/4 "	Arenol	1.75	Armed	15.00	Altricfor	5.00
5 "	2 "	7 3/4 "	Easlija	5.00	Easjik	75.00	Alumeg	6.00
5 1/2 "	2 1/4 "	8 3/4 "	Easimbe	6.00	Easkec	100.00	.....	.....
6 "	2 1/2 "	9 1/2 "	Easined	7.50	Easkohd	125.00	.....	.....
7 1/4 "	3 "	11 1/2 "	Easinvu	10.00	Easkude	150.00	.....	.....

Fig. 77
Octagon Wood Sucker Rod and Couplings



Fig. 68

Forged Sucker Rod Couplings

Goulds Brass Tubular Well Cylinders

To be Anchored in Pipe After Well is Lined

The construction of Fig. 1164, Brass Working Barrel or Cylinder, is plainly shown in sectional engraving. It has brass body, check and plunger, with rubber valve discs and is of special service in small bore wells or where a larger cylinder is required than well lining will admit in Artesian Cylinder of the type of Figs. 904, 1135, etc. Fig. 691 is for same purpose as Fig. 1164. It has four leather plunger and bronze ball valves.

Figs. 1164 and 691. Sizes, Prices, Etc.



Fig. 1164

Size of Well	Inside Diameter of Cylinder	Length Stroke	Length Barrel	Capacity per Stroke	Usual Speed and Capacity per Minute		Square Wood Sucker Rod	Fig. 1164		Fig. 691	
								With 3 Leather Plunger and Spool Poppet Valves		With 4 Leather Plunger and Bronze Ball Valves	
								Cipher	Price	Cipher	Price
3½ in.	3 in.	10 in.	28 in.	.306 gal.	35 revs.	10.71 gals.	2 in.	Panike	\$19.50	Peopie	\$29.00
	3 "	14 "	32 "	.428 "	30 "	12.84 "	2 "	Pawnat	20.50	Peopod	30.00
	3 "	16 "	34 "	.489 "	30 "	14.67 "	2 "	Pawned	21.50	Peopug	31.00
4 "	3 "	24 "	42 "	.734 "	25 "	18.35 "	2 "	Pawnis	24.00	Peopwo	33.00
	3½ "	10 "	28 "	.416 "	35 "	14.56 "	2½ "	Tintis	25.00	Peopxu	39.00
	3½ "	14 "	32 "	.583 "	30 "	17.49 "	2½ "	Pawnoc	26.50	Peoqua	40.50
4½ "	3½ "	16 "	34 "	.666 "	30 "	19.98 "	2½ "	Tintom	27.00	Peoqvut	41.00
	3½ "	24 "	42 "	.999 "	25 "	24.97 "	2½ "	Tintug	29.00	Peorac	43.00
	4 "	10 "	34 "	.544 "	35 "	19.04 "	2½ "	Peruson	48.00	Peruson	48.00
5 "	4 "	14 "	38 "	.761 "	30 "	22.83 "	2½ "	Perusud	49.50	Perusud	49.50
	4 "	16 "	40 "	.87 "	30 "	26.10 "	2½ "	Peruta	50.00	Peruta	50.00
	4 "	24 "	48 "	1.30 "	25 "	32.50 "	2½ "	Perutem	51.50	Perutem	51.50
6 "	4½ "	10 "	34 "	.688 "	35 "	24.08 "	3 "	Perutis	64.50	Perutis	64.50
	4½ "	14 "	38 "	.903 "	30 "	28.89 "	3 "	Perutiv	66.50	Perutiv	66.50
	4½ "	16 "	40 "	1.10 "	30 "	33.00 "	3 "	Perutop	67.50	Perutop	67.50
7 "	4½ "	24 "	48 "	1.65 "	25 "	41.25 "	3 "	Perutug	70.50	Perutug	70.50
	5½ "	10 "	38 "	1.02 "	35 "	35.70 "	3½ "	Perutyn	82.00	Perutyn	82.00
	5½ "	14 "	42 "	1.44 "	30 "	43.20 "	3½ "	Pervac	85.00	Pervac	85.00
8 "	5½ "	16 "	44 "	1.64 "	30 "	49.20 "	3½ "	Perves	87.00	Perves	87.00
	5½ "	24 "	52 "	2.46 "	25 "	61.50 "	3½ "	Pervidy	92.00	Pervidy	92.00
	6½ "	10 "	42 "	1.43 "	35 "	50.05 "	4 "	Pervifs	123.00	Pervifs	123.00
9 "	6½ "	14 "	46 "	2.01 "	30 "	60.30 "	4 "	Pervoda	127.00	Pervoda	127.00
	6½ "	16 "	48 "	2.29 "	30 "	68.70 "	4 "	Pervoco	129.00	Pervoco	129.00
	6½ "	24 "	56 "	3.44 "	25 "	86. "	4 "	Pokist	136.00	Pokist	136.00
10 "	7½ "	10 "	44 "	1.88 "	35 "	65.80 "	5 "	Pokita	198.00	Pokita	198.00
	7½ "	14 "	48 "	2.63 "	30 "	78.90 "	5 "	Pokjid	202.00	Pokjid	202.00
	7½ "	16 "	50 "	3. "	30 "	90. "	5 "	Pokjifs	204.00	Pokjifs	204.00
	7½ "	24 "	58 "	4.51 "	25 "	112.75 "	5 "	Pokjigo	212.00	Pokjigo	212.00

See Figs. 1330, 692 and 143½ (page 79) for use with above.



Fig. 691

Goulds Well Packer

Fig. 1330 shows a Well Packer for making tight joint between strainer and well casing, also for supporting Cylinders, Figs. 1164 and 691, page 78.

Fig. 1330. Sizes, Prices, Etc.

Size of Well	Bottom Threaded for Pipe	Price	Size of Well	Bottom Threaded for Pipe	Price
2 in.	1¼ in.	\$1.50	4½ in.	3 in.	\$7.50
2½ "	1½ "	2.00	5 "	3½ "	10.00
3 "	2 "	2.70	6 "	4 "	14.00
3½ "	2 "	4.50	7 "	5 "	20.00
4 "	2½ "	6.00	8 "	6 "	30.00



Fig. 1330

Gum Packers, with Brass Attached

For Lowering and Seating Working Barrel in Well

The usual gum packer (to which suction strainer may be attached) anchors cylinder in place in pipe. Where wells are not lined to bottom, or for any reason it is desired to attach suction pipe below cylinder, this pipe should be extended to rest on bottom of well.



Fig. 692

Seating Tool "Eureka" Cylinder



Fig. 143 ½. Sizes and Prices.

Fig. 692. Sizes and Prices

Diameter Well Casing	Price
2 in.	\$1.15
2½ "	1.60
3 "	2.10
3½ "	2.95
4 "	3.40
4½ "	4.75
5 "	5.25
6 "	6.15
7 "	8.70
8 "	11.40

For 2 inch Cylinder.....Each,	\$0.60	For 5 inch Cylinder.....Each,	\$6.00
" 2½ " " " " " " " " " " " "	.90	" 6 " " " " " " " " " "	8.00
" 3 " " " " " " " " " " " "	1.20	" 7 " " " " " " " " " "	10.00
" 4 " " " " " " " " " " " "	2.40	" 8 " " " " " " " " " "	12.00

Directions

To fasten Cylinders, Figs. 1164 and 691, in well, attach seating tool, Fig. 143½, to pump-rod, insert it in key way of Well Packer, Fig. 1330, see above, lower in well to place where you wish to seat cylinder, turn pump-rod to the right, which forces taper wedge into rubber ring, expands same and makes tight joint; release seating tool and withdraw rod from well, attach pump-rod to plunger of cylinder, screw check valve to bottom of plunger and drive firmly into taper of cylinder. Take Gum Packer with brass attachment, Fig. 692, see above, place it on outside of taper of cylinder, crowd it on cylinder until it expands to size of well; lower valves, cylinder and Gum Packer with brass attachment to place in well where well packer is fastened, drive cylinder firmly into Gum Packer, unscrew plunger from check valve and attach pump-rod to pump-head.

To locate strainer in well, screw Well Packer, Fig. 1330, see above, on upper end of same, attach seating tool, Fig. 143½, see above, to drill rod and insert into key seat of Well Packer; lower all into well to place where strainer is to be located, turn drill-rod to the right which forces taper wedge into rubber ring, expanding same and making tight joint.

To remove strainer from well, lower seating tool to key seat in Well Packer, turn to the left, partly unscrewing taper wedge from coupling, which contracts rubber packer and permits strainer to be withdrawn.

Goulds "Eureka" Tubular Well Cylinders



Fig. 142
With Poppet
Valves

Fig. 142 represents Goulds "Eureka" Seamless Brass Tubular Well Cylinder with Brass Poppet Valves and Two Leather Plunger. It can be used in rough pipe after the well is made, using the Seating Tool attached to drill rod to crowd it down to its place, and then to expand the rubber ring to hold firmly in place. Spring dog coupling prevents cylinder from turning.

Fig. 1401 represents Goulds "Eureka" Seamless Brass Tubular Well Cylinder with Bronze Ball Valves and Four Leather Plunger. This cylinder is adapted for same uses as Fig. 142.

Figs. 142 and 1401. Sizes, Prices, Etc. Complete With Valves and Spring Dog Coupling.

Size of Well	Inside Diameter	Stroke	Fig. 142. Price of Cylinder Complete With 2 Leather Plunger	Fig. 1401. Price of Cylinder Complete With 4 Leather Plunger and Bronze Ball Valves	Size of Well	Inside Diameter	Stroke	Fig. 142. Price of Cylinder Complete With 2 Leather Plunger	Fig. 1401. Price of Cylinder Complete With 4 Leather Plunger and Bronze Ball Valves
2 in.	1 1/8 in.	10 in.	\$6.40	\$4.50	4 in.	3 1/2 in.	24 in.	\$42.00	\$35.50
2 "	1 1/8 "	16 "	7.60	5.00	4 1/2 "	4 "	16 "	50.00	41.00
2 1/2 "	2 1/4 "	10 "	11.00	9.00	4 1/2 "	4 "	24 "	58.00	45.00
2 1/2 "	2 1/4 "	16 "	12.50	10.50	5 "	4 1/2 "	24 "	60.00	60.00
3 "	2 3/4 "	10 "	15.00	12.50	5 "	4 1/2 "	36 "	80.00	70.00
3 "	2 3/4 "	16 "	17.00	13.50	6 "	5 1/2 "	24 "	112.00	90.00
3 1/2 "	3 "	12 "	30.00	23.00	6 "	5 1/2 "	36 "	136.00	104.00
3 1/2 "	3 "	16 "	33.00	24.50	8 "	7 1/8 "	36 "	360.00	260.00
4 "	3 1/2 "	12 "	33.00	31.00	8 "	7 1/8 "	42 "	400.00	300.00
4 "	3 1/2 "	16 "	36.00	32.50					



Fig. 1401
With Ball
Valves

Goulds Iron and Wood Rod Couplings

Couplings for Iron Rods

Hexagon Couplings for Iron Rods



Fig. 232 Sizes and Prices

Size Rods	Threads to the inch	Galvanized Per lb.	Plain Per lb.	Brass Per lb.
$\frac{3}{8}$ in.	14, regular	\$0.20	\$0.16	\$0.50
$\frac{3}{8}$ "	16, to order	.20	.16	.50
$\frac{3}{8} \times \frac{7}{8}$ "	12 x 14	.20	.16	.50
$\frac{1}{2}$ "	12	.20	.16	.50
$\frac{1}{2}$ "	12	.20	.16	.50
$\frac{5}{8}$ "	11	.20	.16	.50
$\frac{3}{4}$ "	10	.20	.16	.50



Fig. 233 $\frac{1}{2}$. Sizes and Prices

Size Rods	Threads to the Inch	Galvanized per lb.	Plain per lb.	Brass per lb.
$\frac{3}{8}$ in.	14, regular	\$0.20	\$0.16	\$0.50
$\frac{3}{8}$ "	16, to order	.20	.16	.50
$\frac{3}{8} \times \frac{7}{8}$ "	12 x 14	.20	.16	.50
$\frac{1}{2}$ "	12	.20	.16	.50
$\frac{1}{2}$ "	12	.20	.16	.50

Pipe Rod Couplings

For $\frac{3}{8}$ -Inch Pipe



Fig. 232 $\frac{1}{2}$

	Galvanized Per lb.	Plain Per lb.
Pipe Thread	\$0.22	\$0.18

Hexagon Lock Nut

For Pump Rods

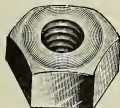


Fig. 1397

	Per lb.
$\frac{3}{8}$ Galv. Hexagon Lock Nuts,	\$0.30
$\frac{1}{2}$ " " " "	.30
$\frac{1}{2}$ " " " "	.30

Reducer Coupling

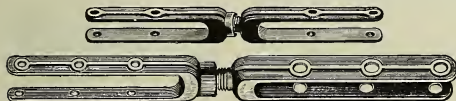
For $\frac{1}{2}$ and $\frac{3}{4}$ -Inch Pipe and Steel Pump Rods



Fig. 234 $\frac{1}{2}$

Size	Galvanized Per lb.	Plain Per lb.
$\frac{1}{2}$ in. pipe $\frac{3}{8}$ in. rod	\$0.30	\$0.25
$\frac{1}{2}$ " " $\frac{7}{8}$ " "	.30	.25
$\frac{3}{4}$ " " $\frac{1}{2}$ " "	.30	.25
$\frac{3}{4}$ " " $\frac{7}{8}$ " "	.30	.25

Wood Rod Couplings. Fig. 9



For 1 and $1\frac{1}{8}$ -in. Rod, plain, 2 hole, per pair,	\$0.10
" 1 " $1\frac{1}{8}$ " " galv., 2 " "	.14
" 1 " $1\frac{1}{8}$ " " plain, 3 " "	.16
" 1 " $1\frac{1}{8}$ " " galv., 3 " "	.20
" $1\frac{1}{4}$ " $1\frac{1}{8}$ " " plain, 3 " "	.20
" $1\frac{1}{4}$ " $1\frac{1}{8}$ " " galv., 3 " "	.24

Goulds Check and Foot Valves, Strainers, Etc.

Foot Valves and Strainers.

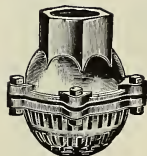


Fig. 760,
2 1/2 in. and up.



Fig. 760,
3/4 to 2 in.



Fig. 471



Fig. 1259



Fig. 473



Fig. 475

SIZE, INCHES	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12
Fig. 760, Plain.	\$0.42	\$0.42	\$0.48	\$0.62	\$0.82	\$1.20	\$1.70	\$2.50	\$2.75	\$4.25	\$7.00	\$16.00	\$30.00	\$60.00
Galv. . . . .	.60	.60	.75	1.00	1.45	2.00	2.70	3.90	4.25	6.50	10.00	30.00	50.00	90.00

Check Valves



Fig. 667



Fig. 742

SIZE, INCHES	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Fig. 667, Plain.	\$1.50	\$1.75	\$2.00	\$2.50	\$3.00	\$4.25	\$6.00	-----	-----	-----	-----	-----
Galv.	2.00	2.25	2.75	3.50	4.50	6.00	10.00	-----	-----	-----	-----	-----
Fig. 742, Plain.	1.00	1.25	1.50	2.00	2.75	6.00	7.50	\$10.00	\$12.00	-----	-----	-----
Galv.	1.50	1.75	2.25	3.00	4.00	9.50	12.00	15.00	17.50	-----	-----	-----
Fig. 471, Plain.	1.75	2.00	2.25	2.50	3.00	3.50	4.50	-----	-----	-----	-----	-----
Galv.	2.50	2.75	3.00	3.50	4.50	5.50	7.00	-----	-----	-----	-----	-----
Fig. 1259, Plain.	-----	-----	2.25	2.50	3.00	-----	-----	-----	-----	-----	-----	-----
Galv.	-----	-----	3.00	3.50	4.50	-----	-----	-----	-----	-----	-----	-----
Fig. 473.	-----	-----	-----	-----	-----	4.75	5.75	7.00	8.50	\$10.00	-----	-----
Fig. 475.	-----	-----	-----	-----	-----	-----	-----	-----	8.50	10.00	\$12.00	\$15.00



Fig. 826

Strainers

SIZE, INCHES	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Fig. 826, Plain.	-----	-----	\$0.80	\$1.05	\$1.70	\$1.90	\$2.40	\$3.40
Galv.	-----	-----	1.10	1.60	2.60	2.90	3.80	5.00
Fig. 1232, Plain.	\$1.25	\$1.50	2.00	2.75	-----	-----	-----	-----
Galv.	1.75	2.25	3.00	4.00	-----	-----	-----	-----



Fig. 1232

Goulds Suction Strainers

Sizes and Prices

Size, Inches.....	1	1½	1½	2
Fig. 658, Plain, Without Brass Gauze, Each....	\$0.18	\$0.20	\$0.24	\$0.36
Galvanized, Without Brass Gauze, Each.....	.22	.24	.26	.40
Galvanized, With Brass Gauze, Each.....	.28	.32	.36	.50
Fig. 659, Plain, Without Brass Gauze, Each....	.18	.20	.24	.36
Galvanized, Without Brass Gauze, Each.....	.22	.24	.26	.40
Galvanized, With Brass Gauze, Each.....	.28	.32	.36	.50
Fig. 660, Plain, Without Brass Gauze, Each....	.18	.20	.24	.36
Galvanized, Without Brass Gauze, Each.....	.22	.24	.26	.40
Galvanized, With Brass Gauze, Each.....	.28	.32	.36	.50

Set
Screw

Fig. 658

Female
Tread

Fig. 659

Male
Thread

Fig. 660

Goulds Water Works Strainers

These Strainers are made of heavy pipe, galvanized after the holes are put in, and covered with heavy woven wire cloth.



Fig. 141 ½

Size	No. Square Inches of Filtering Surface per foot	Fig. 141 ½ List Price per Foot, 60 Gauze
3 in.	30	\$ 2.75
3½ "	33	3.15
4 "	36	3.90
4½ "	39	4.50
5 "	42	5.25
6 "	48	6.00
7 "	51	7.50
8 "	54	9.00
9 "	60	12.00
10 "	67	14.00
12 "	72	18.00

Cooks Seamless Brass Slotted Strainer



Fig. 1279. Sizes, Prices, Etc.

Inside Diameter of Well, Inches.....	2	2½	3	3½	4	4½	5	6	7	8
Length in Feet	2	2	2	2	4	4	4	6	6	6
Price	\$4.20	\$4.80	\$6.00	\$8.10	\$15.60	\$17.40	\$19.20	\$36.00	\$46.80	\$61.20
Add for Each Additional 2 Feet	2.70	3.00	3.60	5.10	6.00	6.60	7.80	9.60	13.20	16.80

Goulds Brass Jacket Drive Well Point

Fig. 524—Sizes, Prices, Etc.



Fig. 524

Trade No.	Diameter Pipe	Length of Pipe	Length of Jacket	No. of Holes	No. 60 Gauze, per Dozen	No. 70 Gauze, per Dozen	No. 80 Gauze, per Dozen	No. 90 Gauze, per Dozen	No. 100 Gauze, per Dozen
74	1 in.	24 in.	18 in.	72	\$33.00	\$40.00	\$46.00	\$52.00	\$62.00
76	1 "	30 "	24 "	96	42.00	49.00	56.00	64.00	78.00
78	1 "	36 "	30 "	120	51.00	59.00	66.00	76.00	94.00
80	1 "	42 "	36 "	144	60.00	68.00	76.00	88.00	120.00
82	1 "	48 "	42 "	168	69.00	78.00	86.00	100.00	136.00
84	1 "	54 "	48 "	192	78.00	87.00	96.00	112.00	152.00
86	1 1/2 "	20 "	14 "	80	30.00	36.00	42.00	50.00	64.00
90	1 1/2 "	24 "	18 "	100	36.00	44.00	52.00	60.00	80.00
94	1 1/2 "	30 "	24 "	130	46.00	55.00	64.00	75.00	100.00
98	1 1/2 "	36 "	30 "	165	56.00	66.00	76.00	90.00	120.00
100	1 1/2 "	42 "	36 "	200	66.00	77.00	88.00	105.00	140.00
102	1 1/2 "	48 "	42 "	270	76.00	88.00	100.00	120.00	160.00
106	1 1/2 "	54 "	48 "	260	86.00	99.00	112.00	135.00	180.00
110	1 1/2 "	60 "	54 "	290	96.00	110.00	124.00	150.00	200.00
112	1 1/2 "	66 "	60 "	320	106.00	121.00	136.00	165.00	220.00
114	1 1/2 "	72 "	66 "	350	116.00	132.00	148.00	180.00	240.00
136	1 1/2 "	24 "	18 "	120	48.00	57.00	65.00	78.00	94.00
140	1 1/2 "	30 "	24 "	165	60.00	70.00	80.00	118.00	140.00
144	1 1/2 "	36 "	30 "	198	72.00	84.00	95.00	114.00	142.00
146	1 1/2 "	42 "	36 "	240	84.00	97.00	110.00	132.00	166.00
148	1 1/2 "	48 "	42 "	276	96.00	111.00	125.00	150.00	188.00
150	1 1/2 "	54 "	48 "	312	108.00	124.00	140.00	168.00	204.00
152	1 1/2 "	60 "	54 "	348	120.00	138.00	155.00	186.00	228.00
154	1 1/2 "	66 "	60 "	384	132.00	151.00	170.00	204.00	252.00
156	1 1/2 "	72 "	66 "	420	144.00	165.00	185.00	222.00	276.00
160	2 "	24 "	18 "	144	75.00	85.00	94.00	110.00	130.00
164	2 "	30 "	24 "	208	90.00	101.00	112.00	130.00	160.00
168	2 "	36 "	30 "	264	105.00	118.00	130.00	154.00	190.00
170	2 "	42 "	36 "	288	120.00	134.00	148.00	176.00	220.00
172	2 "	48 "	42 "	336	135.00	151.00	166.00	198.00	250.00
174	2 "	54 "	48 "	384	150.00	167.00	184.00	220.00	280.00
176	2 "	60 "	54 "	432	165.00	184.00	202.00	242.00	310.00
178	2 "	66 "	60 "	480	180.00	200.00	220.00	264.00	340.00
180	2 "	72 "	66 "	528	195.00	217.00	238.00	286.00	370.00
184	2 1/2 "	36 "	30 "	300	180.00	205.00	230.00	260.00	300.00
188	2 1/2 "	48 "	42 "	360	230.00	265.00	300.00	340.00	400.00
192	2 1/2 "	60 "	54 "	420	280.00	325.00	370.00	420.00	500.00
196	2 1/2 "	72 "	66 "	480	330.00	385.00	440.00	500.00	600.00
200	3 "	36 "	30 "	300	240.00	275.00	310.00	340.00	410.00
204	3 "	48 "	42 "	360	300.00	345.00	390.00	430.00	520.00
208	3 "	60 "	54 "	540	360.00	415.00	470.00	520.00	630.00
212	3 "	72 "	66 "	660	420.00	485.00	550.00	610.00	740.00
216	4 "	48 "	36 "	360	480.00	520.00	560.00	600.00	700.00
220	4 "	72 "	60 "	600	630.00	695.00	760.00	840.00	1,000.00
224	4 "	96 "	84 "	840	780.00	870.00	960.00	1,080.00	1,300.00
228	4 "	120 "	108 "	1,080	930.00	1,045.00	1,160.00	1,320.00	1,600.00



Con-
structive
View.

Goulds Flush or Tubular Well Points

Fig. 662. Sizes, Prices, Etc.

Trade No.	Diameter Pipe	Length of Pipe	Length of Jacket	Number of Holes	No. 60 Gauze, per Dozen	No. 70 Gauze, per Dozen	No. 80 Gauze, per Dozen	No. 90 Gauze, per Dozen	No. 100 Gauze, per Dozen
73	1 in.	30 in.	18 in.	72	\$34.00	\$40.00	\$45.00	\$50.00	\$55.00
75	1 "	36 "	18 "	72	38.00	44.00	50.00	56.00	66.00
75½	1 "	36 "	24 "	96	43.00	49.00	55.00	62.00	77.00
77	1 "	42 "	24 "	96	47.00	54.00	60.00	68.00	82.00
77½	1 "	42 "	30 "	120	52.00	59.00	65.00	74.00	91.00
79	1 "	48 "	30 "	120	56.00	63.00	70.00	80.00	98.00
79½	1 "	48 "	36 "	144	61.00	68.00	75.00	86.00	109.00
81	1 "	54 "	36 "	144	65.00	73.00	80.00	92.00	114.00
81½	1 "	54 "	42 "	144	70.00	78.00	85.00	98.00	125.00
83	1 ½ "	42 "	18 "	100	46.00	53.00	60.00	71.00	86.00
116	1 ½ "	24 "	18 "	100	41.00	49.00	57.00	65.00	85.00
117	1 ½ "	30 "	24 "	130	46.00	55.00	64.00	75.00	100.00
117½	1 ½ "	30 "	24 "	130	51.00	60.00	68.00	80.00	105.00
118	1 ½ "	36 "	24 "	130	56.00	65.00	73.00	85.00	110.00
119	1 ½ "	42 "	24 "	130	61.00	70.00	78.00	90.00	115.00
120	1 ½ "	48 "	30 "	165	56.00	66.00	76.00	90.00	120.00
121	1 ½ "	36 "	30 "	165	61.00	71.00	80.00	95.00	125.00
122	1 ½ "	42 "	30 "	165	66.00	76.00	85.00	100.00	130.00
123	1 ½ "	48 "	30 "	165	71.00	81.00	91.00	105.00	135.00
124	1 ½ "	54 "	30 "	200	66.00	77.00	88.00	105.00	140.00
125	1 ½ "	48 "	36 "	200	71.00	82.00	92.00	110.00	145.00
126	1 ½ "	54 "	36 "	200	76.00	87.00	97.00	115.00	150.00
127	1 ½ "	60 "	36 "	200	81.00	92.00	102.00	120.00	155.00
128	1 ½ "	48 "	42 "	230	76.00	87.00	97.00	115.00	150.00
129	1 ½ "	54 "	42 "	230	81.00	92.00	102.00	120.00	155.00
130	1 ½ "	60 "	42 "	230	86.00	98.00	110.00	130.00	170.00
131	1 ½ "	66 "	42 "	230	91.00	103.00	115.00	135.00	175.00
132	1 ½ "	60 "	48 "	260	91.00	104.00	116.00	140.00	180.00
133	1 ½ "	66 "	48 "	260	96.00	109.00	122.00	145.00	185.00
135	1 ½ "	72 "	48 "	260	101.00	114.00	127.00	150.00	190.00
137	1 ½ "	54 "	48 "	260	86.00	98.00	110.00	130.00	170.00
143	1 ½ "	60 "	54 "	280	96.00	109.00	122.00	145.00	185.00
149	1 ½ "	66 "	60 "	300	106.00	119.00	132.00	155.00	195.00
151	1 ½ "	72 "	66 "	320	116.00	129.00	142.00	165.00	205.00

Goulds Washer Drive Well Points

Fig. 661. Sizes, Prices, Etc.

Trade No.	Diameter Pipe	Length of Pipe	No. of Holes	No. 60 Gauze, per Dozen	No. 70 Gauze, per Dozen	No. 80 Gauze, per Dozen	No. 90 Gauze, per Dozen	No. 100 Gauze, per Dozen
300	1 ½ in.	20 in.	50	\$30.00	\$36.00	\$42.00	\$50.00	\$64.00
301	1 ½ "	24 "	60	36.00	44.00	52.00	60.00	80.00
302	1 ½ "	30 "	80	46.00	55.00	64.00	75.00	100.00
303	1 ½ "	36 "	100	56.00	66.00	76.00	90.00	120.00
304	1 ½ "	42 "	120	66.00	77.00	88.00	105.00	140.00
305	1 ½ "	48 "	140	76.00	88.00	100.00	120.00	160.00
320	1 ½ "	24 "	80	48.00	57.00	65.00	78.00	94.00
321	1 ½ "	30 "	110	60.00	70.00	80.00	96.00	118.00
322	1 ½ "	36 "	130	72.00	84.00	95.00	114.00	142.00
323	1 ½ "	42 "	150	84.00	97.00	110.00	132.00	160.00
324	2 "	30 "	140	90.00	101.00	112.00	134.00	160.00
325	2 "	36 "	170	105.00	118.00	130.00	154.00	190.00
326	2 "	42 "	220	120.00	134.00	148.00	176.00	220.00

Fig. 662

Fig. 661

Goulds Tubular Well Tools

Malleable Drive Cap



Fig. 510

For 1¼ in. pipe.....	20c. each
" 1½ "	24c. "
" 2 "	44c. "

Steel Drive Heads—Solid



Fig. 181

For 1¼ in. pipe, each.....	\$1.50
" 1½ " "	2.00
" 2 " "	2.50
" 2½ " "	6.00
" 3 " "	9.00
" 4 " "	16.00

Prices for Figs. 13, 15 and 32

2 inch.....	\$6.00
2½ "	6.50
3 "	7.00
3½ "	8.50
4 "	10.00
4½ "	15.00
5 "	20.00
6 "	25.00

We make Augers to go inside 2-inch pipe when ordered.

Clay
AugerEarth
and
Sand
Boring
AugerSand
and
Clay
Auger

Fig. 13 Fig. 15 Fig. 32

Sand Pump and Drill Combined

Fig. 729. Price List

Gas Pipe Thread Connection	Actual Size of Bit	Price
1 inch.....	1¾ inches	\$1.25
1 "	2 " "	2.00
1 "	2½ " "	3.00
¼ "	3 " "	4.00



Fig. 729

Sand
Catcher

Fig. 219

Fig. 219, Sand Catcher, 1¼ inch, each..... \$2.00

Tank Valves, Cocks, Etc.



Fig. 656



Fig. 657

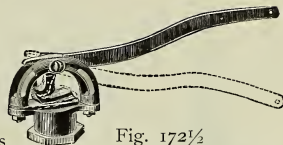


Fig. 172 1/2

Figs. 656, 657, 172 1/2 Wind Mill Tank Valves

Size	3/4 in.		1 in.		1 1/4 in.		1 1/2 in.		2 in.		2 1/2 in.		3 in.	
	Cipher	Price	Cipher	Price	Cipher	Price	Cipher	Price	Cipher	Price	Cipher	Price	Cipher	Price
Fig. 656..	Virelay	\$0.60	Virge	\$0.60	Virgo	\$0.75	Serfing	\$0.90	Grafting	\$1.25	.....	.....	.....	.....
Fig. 657..	Virent	.80	Virgin	.80	Virile	1.00	Grubber	1.25	Kidding	1.50	.....	.....	.....	.....
Fig. 172 1/2	.....	.....	.....	.....	.....	.....	.....	.....	Dotgond	5.00	Dotgost	\$7.50	Dotgoud	\$10.00

Fig. 407. Goose-Neck or Spout. Sizes, Prices, Etc.



Fig. 407

Butt. 3/4 in. Pipe Spout, 3/4 in. Hose		Butt. 1 in. Pipe Spout, 1 in. Hose		Butt. 1 1/4 in. Pipe Spout, 1 1/4 in. Hose		Butt. 1 1/2 in. Pipe Spout, 1 1/2 in. Hose		Butt. 2 in. Pipe Spout, 2 in. Hose	
Cipher	Price	Cipher	Price	Cipher	Price	Cipher	Price	Cipher	Price
Gladdest	\$0.50	Gauzy	\$0.60	Gap	\$0.90	Gouty	\$1.25	Grooming	\$1.50

Fig. 350. Air Chamber. For Use Either on Suction or Discharge

Size of Pipe	3/4 in.	1 in.	1 1/4 in.	1 1/2 in.	2 in.	2 1/2 in.	3 in.	4 in.
Price.....	\$1.75	\$2.00	\$2.75	\$3.00	\$5.00	\$10.00	\$12.50	\$20.00

Fig. 1067 is Brass-fitted Compression Cock. Fig. 490 is Brass-fitted Plug Cock.

No. 1 Cock of either style has coupling nut which fits air chambers of our 2, 2 1/2, and 3-inch House Force Pumps: Also Figs. 401, 402, 413. Nose of No. 1 Cocks is threaded for 1-inch hose coupling.

No. 2 Cock of either style has coupling nut which fits air chamber of our 3 1/2 and larger House Force Pumps: Also Figs. 237 and 593. Nose of No. 2 Cock is cut 1 1/2-in. iron pipe thread. Nut with hose tube for either 1 or 1 1/4-in. hose, furnished if ordered at extra price.

Fig. 1253, Water Conductor, has swivelled bail and is regularly tapped for 1 1/4-in. pipe; fitted 1 1/2-in. to order, price \$1.00.



Fig. 1067

No. 1, \$2.00 No. 2, \$3.00



Fig. 1253



Fig. 350



Fig. 490

No. 1.....\$2.00
2.....3.00

Goulds "Syphon" Wind Mill Force Pump



Fig. 514½

In our "Syphon" Working Barrel the water enters the reservoir, or outer chamber, at suction opening, filling it with water to that point. In this body of water the brass-lined working cylinder, provided with brass plunger, etc., is suspended, leaving suitable space between inner and outer walls and at bottom, the effect of which is that Pump is always primed and ready for use. Plunger and rod may be drawn through top of air chamber without breaking any pipe connections. Wind mill slide included with Pump at prices given below. Forked wood rod coupling or harp connection furnished when ordered at \$1.00 extra list on sizes up to and including 4-inch, and \$2.50 extra list on larger sizes.

Fig. 514½. (*Cipher, Blasted.) Sizes, Prices, Etc.

Dia. Inner Cyl.	Suction and Discharge	8-INCH STROKE		10-INCH STROKE		12-INCH STROKE		16-INCH STROKE	
		Capacity per Stroke	Brass-Lined	Capacity per Stroke	Brass Lined	Capacity per Stroke	Brass-Lined	Capacity per Stroke	Brass-Lined
2 in.	1¼ in. pipe	.11 gal.	\$25.00	.21 gal.	\$27.50	.25 gal.	\$30.00		
2½ "	1½ "	.17 "	25.00	.30 "	30.00	.37 "	32.50		
3 "	1½ "	.24 "	27.50	.42 "	37.50	.50 "	40.00		
3½ "	2 "			.54 "	42.50	.65 "	45.00		
4 "	2 "			.69 "	52.50	.83 "	55.00	1.10 gal	\$70.00
4½ "	2½ "			.85 "	62.50	1.02 "	65.00	1.36 "	80.00
5 "	2½ "			1.22 "	82.50	1.47 "	85.00	1.95 "	105.00
6 "	3 "					2.00 "	125.00	2.66 "	150.00
7 "	3½ "					2.61 "	150.00	3.48 "	175.00
8 "	4 "								

* With Code Word specify Diameter of Cylinder and Length of Stroke.

Goulds "Syphon" Well Force Pump

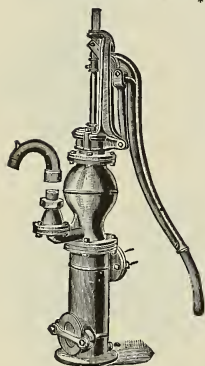


Fig. 776½

Fig. 776½ represents "Syphon" Working Barrel described above, arranged with wind mill top and lever, for manual or wind power. Plunger and rod may be drawn through top of air chamber without breaking any pipe connections. Prices given below include spout. Wind mill slide only sent when specially ordered. Forked and harp connection furnished when so ordered at prices given above.

Fig. 776½. Sizes, Prices, Etc.

Diameter Inner Cylinder	Suction and Discharge	*Lift and Force	6-INCH STROKE			10-INCH STROKE		
			Capacity per Stroke	Cipher	Brass-Lined	Capacity per Stroke	Cipher	Brass-Lined
2 in.	1¼ in. pipe	100 ft.	.08 gal.	Lamfyl	\$28.50			
2½ "	1½ "	100 "	.13 "	Lamgag	28.50	.21 gal.	Laneck	\$31.00
3 "	1½ "	100 "	.18 "	Laneba	31.00	.30 "	Lanedu	33.50
3½ "	2 "	100 "				.42 "	Laneel	42.50
4 "	2 "	100 "				.54 "	Larkob	47.50
4½ "	2½ "	75 "				.69 "	Larkock	60.00
5 "	2½ "	75 "				.85 "	Larkoda	70.00
6 "	3 "	75 "				1.22 "	Larkofa	90.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

Goulds "Syphon" Well Force Pump

For Machine Power

Fig. 1091 is almost identical with our well known Fig. 514½, page 88, except that it is provided with pitman and guide, that it may be operated by any power.

In this Pump the water enters the reservoir, or outer chamber, at suction opening, located above valves, and fills it with water to that point. In this body of water, a brass lined cylinder, provided with brass plunger, etc., is suspended, leaving suitable space between inner and outer walls, the effect of which is that the Pump is always primed.

Plunger Rod may be drawn through top of Air Chamber, without breaking any pipe connections.

Fig. 1091. Sizes, Prices, Etc.

Dia. Inner Cyl.	Suction and Discharge	8-INCH STROKE			10-INCH STROKE			12-INCH STROKE		
		Capacity per Stroke	Cipher	Brass-Lined	Capacity per Stroke	Cipher	Brass-Lined	Capacity per Stroke	Cipher	Brass-Lined
2 in.	1¼ in. pipe	.11 gal.	Gruff	\$35.00	.....	.....	.....	.....	.....	.....
2½ "	1½ "	.17 "	Grufga	35.00	.....	.....	.....	.....	.....	.....
3 "	1½ "	.24 "	Grufho	37.50	.30 gal.	Grufju	\$40.00	.....	.....	.....
3½ "	2 "	.....	.....	.....	.42 "	Grufky	47.50	.50 gal.	Grugcan	\$50.00
4 "	2 "	.....	.....	.....	.54 "	Gruga	57.50	.65 "	Grugcib	60.00
4½ "	2½ "	.....	.....	.....	.69 "	Grugba	67.50	.83 "	Grugdo	70.00
5 "	2½ "	.....	.....	.....	.85 "	Grugin	77.50	1.02 "	Grugful	80.00
6 "	3 "	.....	.....	.....	1.22 "	Grugbod	97.50	1.47 "	Gruggad	100.00



Fig. 1091

Goulds "Vim" Syphon Force Pump

Fig. 1192 shows our new pattern "Vim" Syphon Force Pump for wind mill or other power. Suction opening is at top of outer reservoir and consequently this reservoir is always filled with water. In this reservoir hangs the Brass Working Cylinder. This insures the pump being always primed with valves wet and ready for action. Working Cylinder, plunger and valves can be removed without breaking pipe connection. Cylinder Seamless Brass. All Brass Plunger. Lower valve cage and seat brass. Brass-cased rod and wind mill slide. When wanted with malleable forked rod (instead of wind mill slide), we add \$1.00 extra to list prices.

Fig. 1192. Sizes, Prices, Etc.

Dia. Cyl.	Suction and Discharge	8-INCH STROKE			12-INCH STROKE		
		Capacity per Stroke	Cipher	Brass Cyl.	Capacity per Stroke	Cipher	Brass Cyl.
2½ in.	1½ in. pipe	.17 gal.	Quiicul	\$18.50	.26 gal.	Quigeg	\$20.00
3 "	1½ "	.24 "	Quiifa	21.00	.37 "	Quihat	22.50
3½ "	2 "	.33 "	Quifel	25.00	.50 "	Quihen	27.50
4 "	2 "	.43 "	Quigas	30.00	.65 "	Quihid	32.00

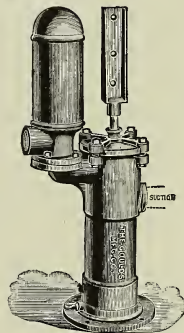


Fig. 1192

Goulds Well Force Pumps

With Oscillating Stub for Wind or Other Power

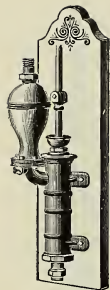


Fig. 266 shows a complete and cheap Force Pump, to be operated by wind mill or other power. May be used in buildings or placed in dug wells out of reach of frost, or in warm climates used above any style of well. Should not be placed more than 25 feet above water supply. Furnished with brackets and plank for attaching to beam, etc.

Fitted for wrought-iron pipe as given in table, unless otherwise ordered. Furnished with Check Valve instead of Air Chamber \$2.00 less list. Forked Wood-Rod Coupling, when required, \$1.00 extra list. Pump, less Plank, 50c. less list.

Fig. 448 shows a Double-Acting Force Pump, with brackets, by many preferred for use with wind mills. The piston rod can be made with a stub end to *weld* on an additional rod or with a malleable coupling for *screwing* on the rod, as ordered. The smaller sizes are preferably employed, on account of the small degree of power requisite, while the quantity of water obtained is equal to the capacity of a single-acting cylinder of much greater size.

Fig. 266



Fig. 448

Fig. 266. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Discharge	Well Rod	*Lift and Force	IRON		BRASS-LINED	
								Cipher	Price	Cipher	Price
0	2 in.	7 in.	.10 gal.	1 in. pipe	1 in. pipe	5/8 in.	75 ft.	Clew	\$11.50	Larkugs	\$14.00
2	2 1/2 "	7 "	.15 "	1 1/4 "	1 1/4 "	5/8 "	75 "	Cliff	12.00	Larkwon	14.50
4	3 "	7 "	.21 "	1 1/4 "	1 1/4 "	5/8 "	75 "	Climb	12.50	Landefs	16.00
6	3 1/2 "	7 "	.29 "	1 1/2 "	1 1/2 "	5/8 "	50 "	Climber	19.00	Landego	23.50
8	4 "	7 "	.38 "	2 "	1 1/2 "	5/8 "	50 "	Climbing	21.00	Landib	26.00

Fig. 448. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Rev.	Suction	Discharge	Well Rod	*Lift and Force	IRON		BRASS-LINED	
								Cipher	Price	Cipher	Price
0	2 in.	7 in.	.19 gal.	1 1/4 in. pipe	1 1/4 in. pipe	1/2 in.	60 ft.	Foxy	\$15.00	Landifi	\$17.50
2	2 1/2 "	7 "	.29 "	1 1/4 "	1 1/4 "	1/2 "	60 "	Frame	15.50	Landols	18.00
4	3 "	7 "	.43 "	1 1/4 "	1 1/4 "	1/2 "	60 "	Fray	19.00	Landubs	22.50
6	3 1/2 "	7 "	.58 "	1 1/2 "	1 1/2 "	5/8 "	45 "	Freak	22.00	Leabac	26.50
8	4 "	7 "	.76 "	2 "	2 "	3/4 "	45 "	Fritted	38.00	Leabid	43.00

*Depth of wells in which Cylinders may be operated, or total lift and force from water to point of discharge, Pump not more than 25 feet above water.

Goulds "Pacific" Well Force Pumps

For Hand and Wind Mill

Fig. 1377 shows our "Pacific" Well Force Pump on base, for hand and wind mill use. It has brass cased rod, brass stuffing box, and is provided with new style compression cock spout, easily detached. Lower valve can be removed through hand hole without disconnecting pump (see illustration). Drip plug in base allows cylinder to be emptied of water.

All Brass Pumps furnished to order.

Fig. 1378 is same as Fig. 1377, except that it has brackets instead of base, and is mounted on plank.

All Brass Pumps furnished to order. Furnished without plank at a reduction of 50 cents list.

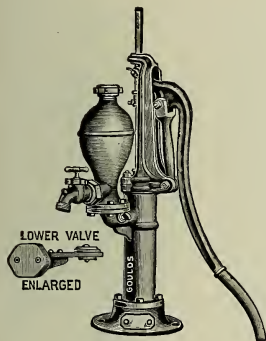


Fig. 1377

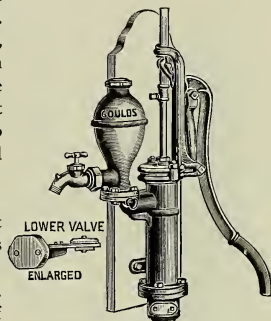


Fig. 1378

Fig. 1377. Sizes, Prices, Etc.

No	Diameter Cylinder	Stroke	Suction	DISCHARGES		IRON		BRASS-LINED		BRASS CYLINDER	
				Top of Air Chamber	Spout	Cipher	Price	Cipher	Price	Cipher	Price
2	2½ in.	{ 6 in. hand and 8 in. mill. }	1¼ in. pipe	1¼ in.	1 in. hose	Uabac	\$16.50	Uabiho	\$19.00	Uaboma	\$21.50
4	3 " "		1¼ " "	1¼ " "	1 " "	Uabbd	17.00	Uabijr	19.50	Uabond	22.00
6	3½ " "		1½ " "	1½ " "	1 " "	Uabef	24.00	Uabiks	27.50	Uabooc	32.00
8	4 " "		2 " "	1½ " "	1 " "	Uabigs	25.50	Uabilm	30.50	Uabopl	38.50

Fig. 1378. Sizes, Prices, Etc.

No	Diameter Cylinder	Stroke	Suction	DISCHARGES		IRON		BRASS-LINED		BRASS CYLINDER	
				Top of Air Chamber	Spout	Cipher	Price	Cipher	Price	Cipher	Price
2	2½ in.	{ 6 in. hand and 8 in. mill. }	1¼ in. pipe	1¼ in.	1 in. hose	Uaboqt	\$16.50	Viskum	\$19.00	Vocubq	\$21.50
4	3 " "		1¼ " "	1¼ " "	1 " "	Uabora	17.00	Viskvy	19.50	Vocurc	22.00
6	3½ " "		1½ " "	1½ " "	1 " "	Vargkud	24.00	Vislat	27.50	Vocust	32.00
8	4 " "		2 " "	1½ " "	1 " "	Varglan	25.50	Visleg	30.50	Vocutic	38.50

Goulds "Atlantic" Double-Acting Force Pump

For Hand, Wind Mill or Other Power

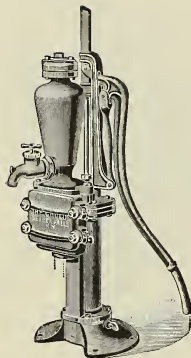


Fig. 1216

Fig. 1216 shows our new "Atlantic" Double-Acting Force Pump with lever and cock spout. Valves are brass, leather-faced and accessible by removing valve box cover. The Piston is double cup leather packed. Pump is strong, compact and of neat design, capable of throwing solid stream to a great height. Discharge may be made at top of air chamber if so desired. Drip plug is provided for emptying Pump in cold weather. Suction and discharge is fitted for iron pipe as specified. Nose of cock screwed for hose coupling.

Fig. 1217 shows our new "Atlantic" Double-Acting Force Pump mounted on plank. It may be operated by hand or connected to Wind Mill or other power as occasion requires. Its construction is essential with that of Fig. 1216, described above and the same remarks will apply to both. Prices include plank.

Furnished without plank at 50 cents less list.

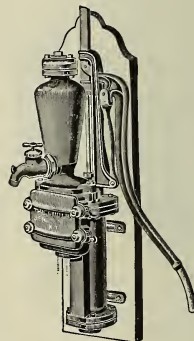


Fig. 1217

Fig. 1216. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Rev.	Suction	DISCHARGES		*Lift and Force	IRON		BRASS-LINED	
					Top of Air Chamber	Cock Spout		Cipher	Price	Cipher	Price
4	3 in.	{ 6 in. Hand 8 " Mill }	.49	1½ in.	1½ in. pipe	1 in. hose	75 ft.	Gageul	\$30.00	Galler	50.00
6	3½ "		.67	2 "	2 "	1¼ "	50 "	Gageva	37.50	Gallest	\$33.50
8	4 "		.87	2 "	2 "	1¼ "	50 "	Gagfly	45.00	Gallie	42.50

Fig. 1217. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Rev.	Suction	DISCHARGES		*Lift and Force	IRON		BRASS-LINED	
					Top of Air Chamber	Cock Spout		Cipher	Price	Cipher	Price
4	3 in.	{ 6 in. Hand 8 " Mill }	.49	1½ in.	1½ in. pipe	1 in. hose	75 ft.	Gallida	\$30.00	Gavale	\$33.50
6	3½ "		.67	2 "	2 "	1¼ "	50 "	Gallio	37.50	Gavame	42.50
8	4 "		.87	2 "	2 "	1¼ "	50 "	Gavab	45.00	Gavana	50.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

Goulds "Atlantic" Double-Acting Force Pumps

For Manual, Wind Mill or Other Power

Figs. 1211 and 1212 represent a new style of Double-Acting Force Pumps, every detail of which has been carefully considered in the design. We offer them with iron or brass-lined cylinder. The valves are brass, leather-faced and have brass seats which, combined, make the best construction. Valves are accessible by removing valve box cover. The piston is packed with double cup leathers. The action of these Pumps is easy, the discharge uniform and constant, making them very effective and durable.

Fig. 1211 has long wood lever for hand use but can be arranged for power by attaching special forked rod which is furnished with any size Pump at \$1.50 extra list.

Fig. 1212 is the same Pump which we build for power, only arranged with pitman and stub end for welding to connecting rod. We supply special forked rod with this Pump at an extra list of \$1.00.

Fig. 1211. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Rev.	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
4	3 in.	10 in. for 8 in. stroke mill	.49 gal.	1½ in. pipe	1½ in. pipe	75 ft.	Frecob	\$40.00	Frecody	\$43.50
6	3½ "	10 " 8 " "	.67 "	2 "	2 "	50 "	Fusuba	50.00	Fusuef	55.00
8	4 "	10 " 8 " "	.87 "	2 "	2 "	50 "	Fusudu	60.00	Fusufo	65.00

Fig. 1212. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Rev.	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED CYLINDER	
							Cipher	Price	Cipher	Price
4	3 in.	10 in. for 8 in. stroke mill	.49 gal.	1½ in. pipe	1½ in. pipe	75 ft.	Fusugas	\$40.00	Fusujag	\$43.50
6	3½ "	10 " 8 " "	.67 "	2 "	2 "	50 "	Fusugib	50.00	Gageta	55.00
8	4 "	10 " 8 " "	.87 "	2 "	2 "	50 "	Fusuho	60.00	Gageta	65.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

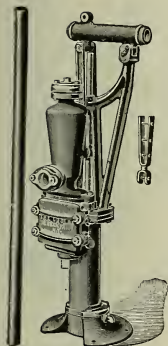


Fig. 1211

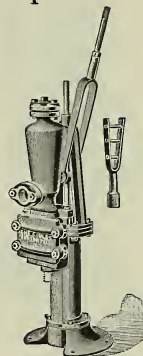


Fig. 1212

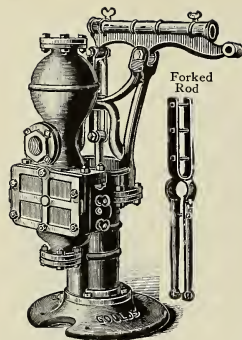


Fig. 338

"Star" Double-Acting Force Pumps

For Hand or Machine Power

Figs. 338 and 339 represent our famous "Star" Double-Acting Railroad Force Pumps, specially designed for the use of distilleries, mills, railroad companies, etc. Briefly described: The Pump is exceptionally heavy and strong in casting, the plunger rod and solid-cross head are of bronze, while the valves (four in number) with their seats, are of the same metal, and grouped under valve cover in front. These valves are of a new type, calculated to develop greatest efficiency, and rubber faced, rendering them perfectly tight, and relieving Pump of all pounding.

Fig. 338 is designed to be worked by wood levers, but can be arranged for power as well by substituting special Strap Rod for regular straps, at \$5.00 extra list.

Fig. 339 is the same Pump, which we build in larger sizes, with stub end for welding to connecting rod, driven by any power, as steam or wind, working head, counter shaft, walking beam, etc., or with Forked Rod, at \$5.00 extra list.

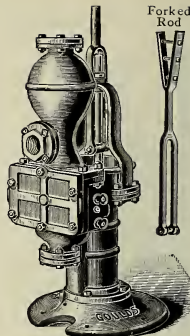


Fig. 339

Fig. 338. Sizes, Prices, Etc.

Dia. Cyl.	Stroke	Capacity per Rev.	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED CYL.	
						Cipher	Price	Cipher	Price
3 in.	8 in. for 6 in. stroke mill	.49 gal.	1½ in. pipe	1½ in. pipe	75 ft.	Ebon	\$65.00	Edge	\$72.00
4 "	8 " " 6 " " "	.87 "	2 " " "	2 " " "	75 "	Echo	75.00	Edict	82.00
5 "	8 " " 6 " " "	1.36 "	2½ " " "	2½ " " "	75 "	Eddy	90.00	Edify	97.00
6 "	8 " " 6 " " "	1.96 "	3 " " "	3 " " "	75 "	Edend	120.00	Edited	130.00

Fig. 339. Sizes, Prices, Etc.

Dia. Cyl.	Stroke	Capacity per Rev.	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED CYL.	
						Cipher	Price	Cipher	Price
3 in.	10 in. for 8 in. stroke mill	.49 gal.	1½ in. pipe	1½ in. pipe	100 ft.	Educt	\$65.00	Elder	\$72.00
3 "	10 " " 8 " " "	.73 "	1½ " " "	1½ " " "	100 "	Eject	78.00	Ella	90.00
4 "	10 " " 8 " " "	.87 "	2 " " "	2 " " "	100 "	Eel	75.00	Elect	82.00
4 "	12 " " 8 " " "	1.09 "	2 " " "	2 " " "	100 "	Eidly	95.00	Elking	105.00
4 "	14 " " 12 " " "	1.31 "	2 " " "	2 " " "	100 "	Ekela	101.00	Elms	115.00
5 "	10 " " 8 " " "	1.36 "	2½ " " "	2½ " " "	100 "	Egg	90.00	Elfed	97.00
5 "	10 " " 12 " " "	2.04 "	2½ " " "	2½ " " "	100 "	Eland	120.00	Elogy	135.00
5 "	14 " " 12 " " "	2.55 "	2½ " " "	2½ " " "	100 "	Elate	135.00	Elong	150.00
5 "	16 " " 18 " " "	3.06 "	2½ " " "	2½ " " "	100 "	Elapse	170.00	Elastic	180.00
6 "	10 " " 8 " " "	1.96 "	3 " " "	3 " " "	100 "	Eider	120.00	Elite	130.00
6 "	16 " " 14 " " "	3.43 "	3 " " "	3 " " "	100 "	Elbow	175.00	Elope	190.00
6 "	20 " " 18 " " "	4.41 "	3 " " "	3 " " "	100 "	Eldate	235.00	Elsen	250.00
7 "	14 " " 12 " " "	4.00 "	4 " " "	4 " " "	75 "	Elding	260.00	Eldern	285.00
7 "	16 " " 14 " " "	4.66 "	4 " " "	4 " " "	75 "	Elding	275.00	Eldorad	300.00
7 "	20 " " 18 " " "	6.00 "	4 " " "	4 " " "	75 "	Elapsot	300.00	Elapsot	330.00
8 "	14 " " 12 " " "	5.22 "	5 " " "	5 " " "	75 "	Electio	300.00	Elector	330.00
8 "	16 " " 14 " " "	6.53 "	5 " " "	5 " " "	75 "	Electri	340.00	Electiv	375.00
8 "	20 " " 18 " " "	7.82 "	5 " " "	5 " " "	75 "	Elapsub	375.00	Elapsyd	415.00

* Total lift and force from supply to point of delivery. Pump not more than 25 feet above water.

Irrigation Table

Giving Capacity in Gallons per Hour and Equivalent in Miners' Inches, Power Required per Foot Lift and Irrigating Acreage

Gallons per hour	Miners' Inches	Approximate Horse Power Required per Foot Lift	Number of Acres Will Cover 1 Inch Deep in 10 Hours	NOTE.
300	42	.004	.18	
1,000	84	.007	.37	Because of varying conditions of climate and soil, no exact rule can be made, yet, as basis for estimate, a supply of 2 to 3 gallons water per minute per acre through irrigating season is considered liberal. Example: 100 acres, 200 to 300 gallons water per minute. In many sections one-half this quantity is sufficient.
1,500	125	.01	.55	
2,000	167	.014	.74	
2,500	217	.017	.92	
3,000	250	.02	1.11	
3,500	292	.024	1.28	
4,000	333	.027	1.48	
4,500	375	.03	1.66	
5,000	417	.034	1.8	
6,000	500	.04	2.2	
7,000	583	.047	2.5	
8,000	667	.054	3.	
9,000	750	.06	3.3	
10,000	833	.067	3.7	
15,000	1,250	.1	5.5	
20,000	1,666	.134	7.4	
25,000	2,083	.167	9.2	
30,000	2,500	.2	11.1	

Note.—As stated, a miner's inch of water is considered in these tables as 12 U. S. gallons per minute. If considered as 9 U. S. gallons per minute, increase our estimate one-third. Our estimate of approximate horse power required per foot lift also makes an allowance of 50 per cent. for friction of water in pipes, etc. The efficiency of small engines or motors of any type cannot be safely accepted on as close estimates as larger powers.

Table of Discharge of Water Over Weirs One Inch Wide, in Gallons per Minute

Depth, inches.....	$\frac{1}{2}$	1	2	3	4	5	6	7	8	9	10	12	18	24	30
Gallons.....	1.14	3.2	9.1	16.7	25.7	35.4	47.2	59.6	72.8	86.5	101.7	133.7	245.7	378.2	516.6

Approximate Heights Pumps May Be Worked by Pony or Horse Gear

The pony or horse in each case being estimated to walk at the rate of three miles per hour.

Diameter of Working Barrel or Cylinder, inches	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	5	6
Single-Barrel Pump, worked by Pony Gear....	260 ft.	175 ft.	135 ft.	100 ft.	64 ft.	44 ft.
Double-Barrel Pump, worked by Pony Gear...	130 "	88 "	68 "	50 "	32 "	22 "
Single-Barrel Pump, worked by Horse Gear...	520 "	350 "	270 "	200 "	128 "	88 "
Double-Barrel Pump, worked by Horse Gear..	260 "	176 "	136 "	100 "	64 "	44 "

The above calculations are based upon strong, powerful horses or ponies being used. If inferior animals are substituted, the heights given will, of course, not be attained.

Goulds Wind Mill Irrigation Cylinders

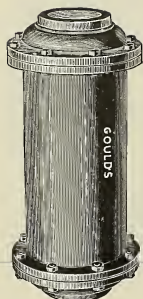


Fig. 1064

Fig. 1064 is largely used with Wind Mills and other power to raise water in large quantities for irrigation or drainage. Double hinged valve in plunger affords ample water way. Lower valve is of same type. We offer in Regular Brass-Lined and Special Brass-Lined, the latter having an extra heavy lining and plunger with brass followers 3 inches long, extra heavy brass valve weights and brass cross bar and bolts. Unless otherwise ordered we fit both suction and discharge for wrought-iron pipe as per table, but when especially ordered can fit top for spiral riveted pipe of same diameter as cylinder and through which the plunger can be withdrawn.

Fig. 1399 represents our Fig. 1064 with extended flange.

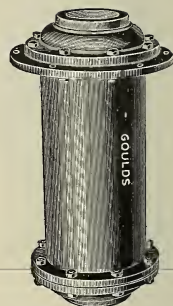


Fig. 1399

Fig. 1064. Sizes, Prices, Etc.

Diameter and Stroke	Capacity per Stroke	Suction and Discharge	Wood Rod	*Lift and Force	REGULAR BRASS-LINED		SPECIAL BRASS-LINED	
					Cipher	Price	Cipher	Price
6 x 15 in.	1.84 gal.	3 in. pipe	2 in.	100 ft.	Nungo	\$26.00	Iteno	\$40.00
7 x 15 "	2.49 "	4 "	2 "	100 "	Numhen	31.00	Itenode	50.00
8 x 15 "	3.26 "	4 "	2 "	75 "	Ondlaw	37.50	Numfy x	60.00
10 x 15 "	5.10 "	5 "	2½ "	50 "	Ondleo	52.50	Paiperl	90.00
12 x 15 "	7.35 "	6 "	3 "	50 "	Ondlom	75.00	Paipida	120.00

Fig. 1399. Sizes, Prices, Etc.

Diameter and Stroke	Capacity per Stroke	Suction and Discharge	Wood Rod	*Lift and Force	BRASS-LINED		SPECIAL BRASS-LINED	
					Cipher	Price	Cipher	Price
6 x 15 in.	1.84 gal.	3 in. pipe	2 in.	100 ft.	Numegi	\$26.00	Nonvoy	\$46.00
7 x 15 "	2.49 "	4 "	2 "	100 "	Numir	31.00	Noset	50.00
8 x 15 "	3.26 "	4 "	2 "	75 "	Obgoss	37.50	Omger	60.00
10 x 15 "	5.10 "	5 "	2½ "	50 "	Oers	52.50	Ondeffa	90.00
12 x 15 "	7.35 "	6 "	3 "	50 "	Ogress	75.00	Ondicje	120.00

*Depth of Wells in which Cylinders may be operated, or total lift and force from surface of water.

Goulds "New Deluge" Irrigation Pumps

With Forked Rod for Wind Mill

Fig. 1043 represents our "New Deluge" Pump, with Fork Rod for Wind Mill. Cylinder is lined with brass; valves are rubber-faced and readily accessible.

This Pump has a special application for pumping water from shallow wells or creeks, 15 or 20 feet distance, for irrigating lands, etc.

Pump will handle muddy or gritty water without choking. Regularly fitted as below.

Fig. 1043½ represents our "New Deluge" Pump, described above, arranged with elevated base to be used above foundation where it is desired to use hose suction or more convenient to make pipe connections in this manner. The suction flange is fitted for sizes of wrought-iron pipe given below, unless otherwise ordered, or can be cut hose gauge to take our regular suction half hose coupling, which is furnished at extra price.

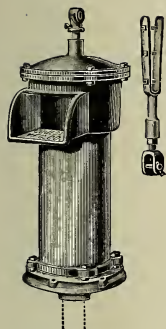


Fig. 1043

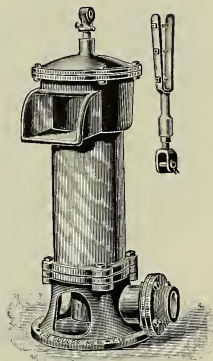


Fig. 1043½

Figs. 1043, 1043½. Sizes, Prices, Etc.

Dia. Cyl.	Stroke	Capacity per Stroke	Suction	Lift	FIG. 1043		FIG. 1043½	
					Cipher	Brass Lined	Cipher	Brass Lined
6 in.	12 in.	1½ gals.	3 in. pipe	20 ft.	Bringer	\$30.00	Broach	\$32.50
8½ "	12 "	3 "	4 "	20 "	Baldpat	40.00	Broaden	45.00
10 "	12 "	4 "	5 "	20 "	Painga	75.00	Paipa	82.50
12 "	12 "	5 "	6 "	20 "	Painhat	120.00	Paipap	130.00

Goulds Triplex Irrigation Pump

For Elevations Up to 50 Feet or Equivalent Pressure

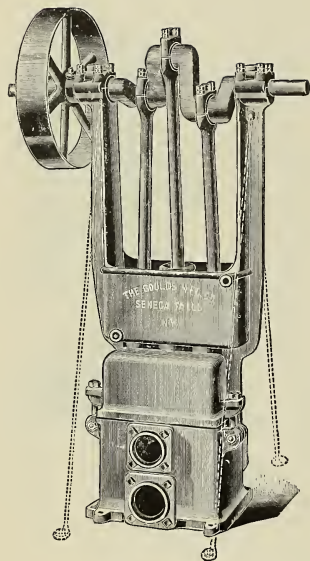


Fig. 1010

Fig. 1010 is a new type of Triplex Power Pump for such light service as required for irrigating land, watering stock, filling tanks, etc. It is fitted with pulley to be driven by belt connection from gas, gasoline, petroleum engine, or other motive power.

The valves are rubber faced, with bronze seats; the plungers are inside-packed and have water seals; substantial connecting rods and crank shaft with ample bearings. Crank shaft is extended at both ends, so that pulley can be used at either end, or pulleys may be mounted at both ends.

It has but few working parts and they are readily accessible for inspection and care. Altogether it is a most excellent, serviceable Pump and meets with a large demand from the agricultural districts.

Fig. 1010. Sizes, Capacities, Etc.

PLUNGERS		Capacity One Rev. of Crank Shaft	Capacity per Hour at 40 Revolutions per Minute	Suction	Discharge	Pulley	Cipher	Brass-Lined Cylinders
Diameter	Stroke							
4 in.	8 in.	1.3 gals.	3,120 gals.	3½ in. pipe	3 in. pipe	20 x 4 in.	Riceba	\$120.00
5 "	10 "	2.5 "	6,000 "	4 "	4 "	30 x 5 "	Boycott	200.00
6 "	12 "	4.4 "	10,560 "	5 "	5 "	36 x 6 "	Boyhood	300.00

Goulds Triplex Irrigation Pump

For Elevations Up to 50 Feet or Equivalent Pressure

Fig. 1388 is a new type of Geared Triplex Power Pump for such light service as required for irrigating land, watering stock, filling tanks, etc. Pump may be driven by gas, gasoline, petroleum engine or other motive power.

The Valves are rubber-faced with bronze seats. The Plungers are inside-packed and have water seals. Connecting Rods are strong and substantial. Crank Shaft is large and has ample bearings.

Pump is simple, having but few working parts, which are readily accessible for inspection and care.

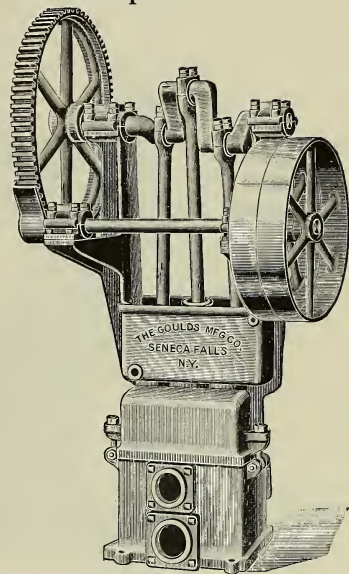


Fig. 1388

Fig. 1388. Sizes, Capacities, Etc.

PLUNGERS		Capacity One Rev. of Crank Shaft	Capacity per Hour at 40 Revolutions per Minute	Suction	Discharge	Geared	Tight and Loose Pulleys	Cipher
Dia.	Stroke							
4 in.	8 in.	1.3 gals.	3,120 gals.	3½ in. pipe	3 in. pipe	6 to 1	20 x 3 in.	Addenor
5 "	10 "	2.5 "	6,000 "	4 "	4 "	6 to 1	26 x 4 "	Aftezop
6 "	12 "	4.4 "	10,560 "	5 "	5 "	6 to 1	30 x 5 "	Aiderson

Goulds Combined Triplex Pump and Horse Power

For Elevations to 50 Feet or Equivalent Pressure

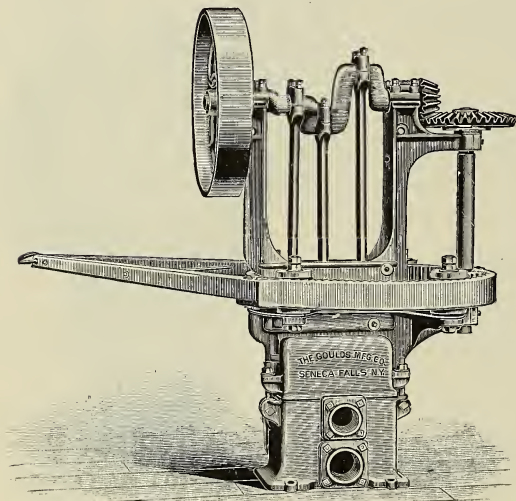


Fig. 1121

Fig. 1121 is a modification of our Fig. 1010 (page 98) Triplex Pump with horse power gear surrounding and direct connected to pump crank shaft. The advantages of the Triplex type Pump was never more clearly demonstrated than when operated by horse power. The operation of this Pump is uniform and smooth, entirely free from that jar and hitch in other Pumps, which is so trying to the animal. Pump is regularly supplied with double sweep, to which one or two horses may be attached. It is regularly geared 14 to 1. Animal will make three to four circuits per minute, giving pump crank shaft a speed of 40 to 50 revolutions per minute. This outfit is especially adapted for farm or country pumping, and offers advantages over wind power in that it is always ready for use and can be transported if necessary.

Fig. 1121. Size, Capacity, Etc.

PLUNGERS		Capacity One Revolution of Crank Shaft	Capacity per Hour at 40 Revolutions per Minute	Suction	Discharge	Cipher	Brass Lined Cylinders
Diameter	Stroke						
4	8	1.3 gals.	3,120 gals.	3½ in. pipe	3 in. pipe	Wooraly	\$200.00

Goulds Double Geared Iron Horse Power

For One or Two Horses

The illustration shows a very powerful Double-Geared Iron Horse Power for one or two horses, with covered internal master gear, two babbitted $1\frac{1}{2}$ -inch journal boxes, driver's seat-pole and all necessary details.

This Horse Power is geared about 14 to 1. The usual travel of horse or other animal is three to four circuits per minute, giving the Tumbling Shaft a speed of from 40 to 50 revolutions per minute. By providing extra length wrought-iron Tumbling Shaft, Plummer Blocks and Driving Pulley at end (which we list below), this Power may be employed for driving our Fig. 1010, Triplex Irrigating Pump (illustrated on page 98) or other Power Pump. Of course it has a wide range of application for other duties where horse power can be employed.

Horse Power alone weighs about 550 pounds. Sweeps about 60 pounds each. Ten feet Shafting with Face Plate, etc., 200 pounds.

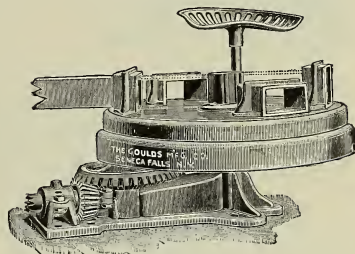


Fig. 914

Fig. 914. Prices, Etc.

Iron Horse Power, with one pole—for one horse.....	(Weir)	\$90.00
Iron Horse Power, with two poles—for two horses.....	(Weir)	93.00
With 10 feet 2 inch Wrought-Iron Tumbling Shaft and Face Plate at end, for 6, 8 and 10 inch stroke, extra.....		15.00
With 10 feet 2 inch Wrought-Iron Tumbling Shaft and 30 x 6 Driving Pulley at end, and 2 Plummer Blocks, extra		30.00
2 inch Wrought-Iron Tumbling Shaft, per foot, extra .....		.75
Air Chamber with Tee for 3 inch pipe, extra		7.50
Heavy Balance Wheel, 36 x $4\frac{1}{2}$ inch, extra		12.00
Plummer Blocks, extra		3.00

Goulds Iron Horse Power

For One or Two Horses

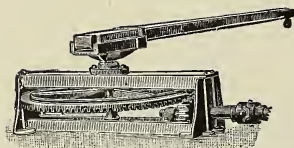


Fig. 597

The cut shows a very simple, though thoroughly constructed One-Horse or Pony Gear for operating any kind of agricultural machinery, as feed cutters, corn mills, etc. We furnish it complete, as shown in cut, with universal joint and stub end to weld to horizontal shaft, and hardwood pole ten feet long. The animal will ordinarily make from three to four circuits per minute, giving the tumbling shaft a speed of 20 to 25 revolutions.

Fig. 597½ represents a larger form of our Fig. 597, described, and can be driven by one or two horses.

Sizes, Prices, Etc.

	Geared	Size Frame	Cipher	Price
Fig. 597, One-horse.....	6½ to 1	38 x 12 in., 10 in. high	Miry	\$55.00
Fig. 597½, Two-horse.....	6 to 1	48 x 32 " 13 " high	Missed	120.00

When pole is not furnished a reasonable reduction will be made.

Goulds Horse Gear Pumping Apparatus

For One or Two Horses

Fig. 884 consists of Horse Gear amply strong for one horse; two-throw wrought-iron crank shaft, plunger blocks for mounting on timbers placed on top of well, slings, guides and rods for connecting to Fig. 527½, Double-Barrel Pump, page 105. The apparatus is very simple, requires but little attention. From three to four circuits a minute are ordinarily made, giving the tumbling shaft a speed of 20 to 25 revolutions per minute. We give prices below and also upon extra tumbling shaft, plunger blocks and universal coupling. Arranged in this manner, animal tracks between well and gear. A track with radius of ten feet is recommended. Price includes one pole.

Fig. 885, Horse Gear Pumping Apparatus, is practically the same as our Fig. 884 described, but about twice as heavy and powerful, and designed to be operated by two horses. Price includes one pole. When furnished with single throw crank deduct \$10.00 list.

Sizes, Prices, Etc.

	Stroke	Geared	*Will Operate	Cipher	Price
Fig. 884, One-horse Gear.	10 in.	6½ to 1	2½ in. double cyl., 85 ft. }	Wayfare	\$95.00
Fig. 885, Two-horse Gear.	10 "	6 to 1	3 " " " 55 " }	Wayfet	160.00
			3½ " " " 80 " }		
			6 " " " 30 " }		

Extra Hardwood Pole, complete\$5.00
2-inch Tumbling Shaft, per foot..... .75

Universal Coupling for Fig. 884.....\$ 9.00
Universal Coupling for Fig. 885..... 13.50
Plummer Blocks..... 3.00

*Smaller Cylinders in proportionately deeper, and larger Cylinders in shallower wells.

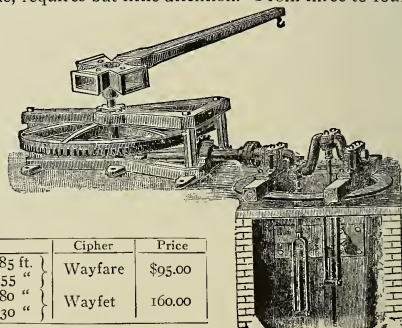


Fig. 885

Goulds Horse Gear Pumping Apparatus

For One or Two Horses

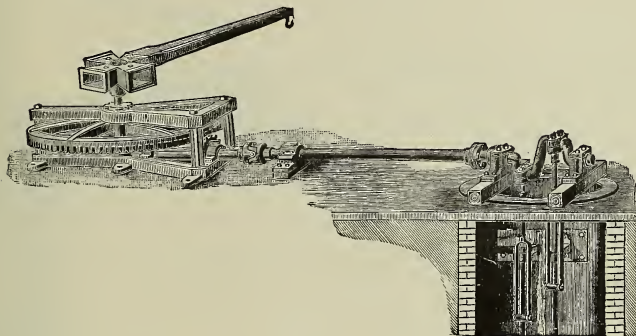


Fig. 894

This consists of horse gear amply strong for two horses; 10 feet of shafting with plummer blocks and couplings, two-throw wrought-iron crank shaft, plummer blocks for mounting on timbers placed on top of well, slings, guides and rods for connecting to pump rods below. The apparatus is very simple, requires but little attention and will work satisfactorily. A track with radius of 10 feet is recommended, the animal tracking between well and gear with this outfit. An animal makes three to four circuits per minute, giving tumbling shaft a speed of 20 to 25 revolutions. Power of donkey or pony one-half that of horse. We recommend our Fig. 527½ (given on page 105), for use with this horse gear.

Fig. 894. Sizes, Prices, Etc.

	Stroke	Geared	*Will Operate	Cipher	Price
One Horse Gear.....	10 in.	6 to 1	{ 2½ in. Double Cyl., 85 ft. }	Bondmaid	\$120.00
Two Horse Gear.....	10 "	6 to 1	{ 3 " " 55 " }	Bondman	170.00
			{ 3½ " " 80 " }		
			{ 6 " " 30 " }		

*Smaller Cylinders in proportionately deeper, and larger Cylinders in shallower Wells.

Goulds Horse Gear and Double Barrel Pump

For Horse Power

Fig. 720 represents Fig. 885, our Two-Horse Gear, and Fig. 527½, Double-Barrel Pump, arranged for well pumping. The Pump is fully described on page 105; Horse Gear on page 102. As illustrated in cut, Pump should be attached to coping or planks laid across the well and a check valve should be placed in the lower end of suction pipe. Roller guides should be located about every 12 feet on supports for the rods to work through. We furnish this pumping apparatus complete with the exception of wrought-iron connecting pipes, rods and roller guides. These we supply according to depth of well at extra price, and will be found listed on pages 105 and 276.

Our table gives full information.

Fig. 720. Sizes, Prices, Etc.

Diameter Cylinders	Stroke	Capacity per Revolution	Suction	Discharge	*Lift and Force	IRON CYLINDER	
						Cipher	Price
2½ in.	10 in.	.43 gals.	1½ in. pipe	1½ in. pipe	150 ft.	Dinjig	\$218.00
3 " "	10 " "	.61 " "	2 " "	2 " "	110 " "	Dipbak	224.00
3½ " "	10 " "	.83 " "	2½ " "	2½ " "	80 " "	Dipbell	234.00
4 " "	10 " "	1.09 " "	2½ " "	2½ " "	60 " "	Dipbig	245.00
5 " "	10 " "	1.70 " "	3 " "	3 " "	40 " "	Driped	280.00
6 " "	10 " "	2.45 " "	3½ " "	3½ " "	26 " "	Dripig	320.00

*Total lift and force from supply to point of delivery, Pump not more than 20 feet above water.

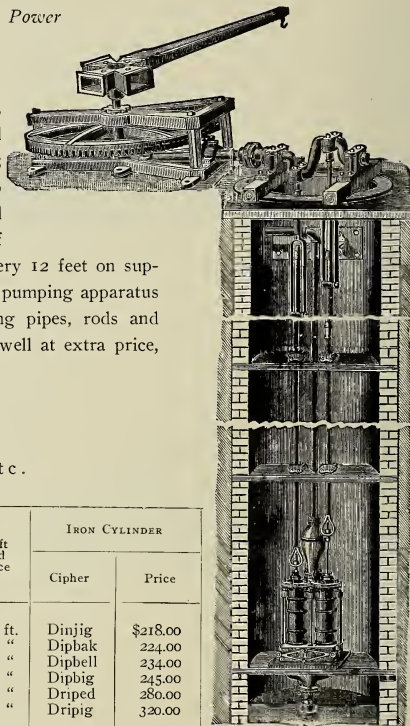


Fig. 720

Goulds Single and Double Barrel Pumps

For Deep Wells

Fig. 526½ represents our Single-Barrel Deep Well Pump, with air chamber in iron or with brass cylinders, as ordered, with doors at top and bottom, allowing free access to all valves. This Pump may be operated by any of our pumping apparatus, pages 106 to 109. A check or foot valve should be placed at extremity of suction pipe. We fit with harp connection and stub for welding to connecting rod.

Fig. 527½ represents our superior Double-Barrel Deep Well Pump, in iron or with brass cylinders, as ordered, with doors at top and bottom for access to all valves.

They are also built with brass stuffing boxes, buckets, rods, etc., and fitted for welding connecting rods to stub with bow, as shown in cut, or pin and socket stub, as preferred. These Double-Barrel Pumps are specially designed to be operated by our Horse Gears, pages 102 and 103, for irrigating service, etc.

Pumps may be worked at 30 to 40 revolutions per minute, according to depth of well.

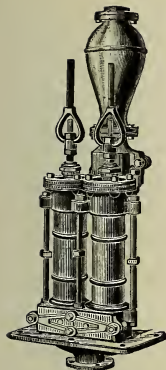


Fig. 527½

Sizes, Prices, Etc.

Fig.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction and Discharge	*Lift and Force	Well Rod	IRON BARREL		BRASS BARREL	
							Cipher	Price	Cipher	Price
526½	2½ in.	10 in.	.21 gal.	1½ in. pipe	200 ft.	¾ in.	Jawad	\$42.00	Jibbo	\$44.50
"	3 " "	10 " "	.31 " "	1½ " "	200 " "	¾ " "	Jayel	44.00	Jigar	49.50
"	3½ " "	10 " "	.42 " "	2 " "	150 " "	¾ " "	Jeerba	49.50	Jobba	57.00
"	4 " "	10 " "	.54 " "	2 " "	150 " "	¾ " "	Jerko	62.00	Jog	71.00
"	5 " "	10 " "	.85 " "	2½ " "	100 " "	¾ " "	Jestlu	84.50	John	103.00
"	6 " "	10 " "	1.22 " "	3 " "	100 " "	¾ " "	Jetam	101.25	Join	129.00
527½	2½ " "	10 " "	.42 " "	1½ " "	200 " "	¾ " "	Joke	58.00	July	71.00
"	3 " "	10 " "	.60 " "	2 " "	200 " "	¾ " "	Jolt	64.00	Jump	81.00
"	3½ " "	10 " "	.84 " "	2½ " "	150 " "	¾ " "	Jots	74.00	June	93.00
"	4 " "	10 " "	1.08 " "	2½ " "	150 " "	¾ " "	Joves	85.00	Junks	108.00
"	5 " "	10 " "	1.70 " "	3 " "	100 " "	¾ " "	Joy	120.00	Jury	175.00
"	6 " "	10 " "	2.44 " "	3½ " "	100 " "	¾ " "	Jug	160.00	Just	235.00

*Total lift and force from water to point of discharge. Pump not more than 25 feet above water.



Fig. 526½



Fig. 515

Goulds Rod Couplings and Guides

Fig. 515. Well Rod Joint and Brass Bush

Fig. 516. Single and Double Roller Guides for Piston Rods

Size Rod In.	¾	¾	¾	1
Cipher	Getterst	Gilding	Gimmel	Girlish
Price	\$1.20	\$1.38	\$1.75	\$2.45

For Rod	¾ OR ¾ IN.		¾ IN.		1 IN.		1¼ IN.	
	Cipher	Price	Cipher	Price	Cipher	Price	Cipher	Price
S'gl Rlr.	Vesta	\$1.25	Vergont	\$1.50	Venum	\$2.45	Leabjoy	\$3.00
D'bl Rlr.	Versing	2.25	.....	.....	.....	.....	.....	.....

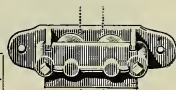


Fig. 516

Goulds Overhead Counter Shaft

For Operating Power Pumps

Fig. 711 represents a light Counter Shaft, consisting of hangers, tight and loose pulleys, face plate, wrist pin and stub rod for driving any of our smaller Power Pumps, such as Fig. 1212, page 93, or Cylinders, pages 68 to 76.

Can change sizes of pulleys enumerated in our tables to meet requirements, at proportionate prices.

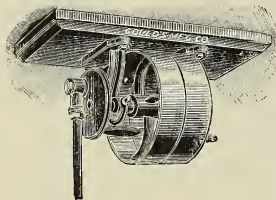


Fig. 711

Fig. 711. Sizes, Prices, Etc.

No	Stroke	Drop of Hanger	Pulleys, Each	*Will Operate	Cipher	Price
1	{ 6 in. 8 " }	12 in.	16 x 3½ in.	{ 4 in. cyl., 55 ft. 5 " 25 "	Syrup	\$30.00
2	{ 6 " 8 "	12 "	18 x 4 "	{ 4 " 5 " 70 " 5 " 50 "	Sythe	35.00
3	{ 6 " 8 " 10 "	12 "	22 x 5 "	{ 4 " 5 " 100 " 6 " 75 " 6 " 25 "	Table	45.00

* Smaller Cylinders proportionately deeper.

Goulds Back Geared Counter Shaft

For Operating Power Pumps

Fig. 1393 represents our Back-Geared Counter Shaft. It is a compact and convenient mechanism for operating a pump by the power derived from a Gas or Steam Engine, a Horse Power, Power Wind Mill, or from the line shaft of a mill or factory.

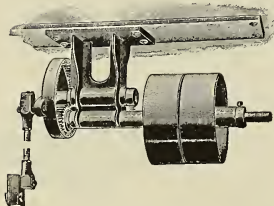


Fig. 1393

Fig. 1393. Size, Price, Etc.

Stroke	Geared	Pulleys	Cipher	Price
2 to 10 inches	3½ to 1	12 x 3 in.	Clubde	\$25.00

Goulds Overhead Geared Counter Shaft

Fig. 650½ represents our Overhead Geared Counter Shaft with plummer blocks, tight and loose pulleys, face plate with pin for varying stroke, connecting rod for driving Power Pumps such as Figs. 714, 514½, 526½, 1212, or Cylinders as shown on pages 68 to 76, etc. We make this Counter Shaft in the shorter strokes only, but can fully recommend for duty specified in our table below. Gears are machine cut. Prices do not include wood frame.

Fig. 650½. Sizes, Prices, Etc.

No	Stroke	Diameter Large Gear	Diameter Small Gear	Face of Gears	Pulleys, Each	Will Operate	Cipher	Price
1A	10 in.	12 in.	4 in.	2½ in.	14 x 4 in.	4 in. cyl., 90 ft.	Beater	\$50.00
	12, 14 or 16 in.	12 "	4 "	2½ "	14 x 4 "	4 " 60 "	Casem	60.00

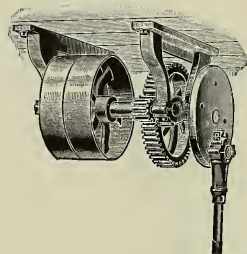


Fig. 650½

Goulds Geared Counter Shaft

Fig. 650 represents our Overhead Geared Counter Shaft, mounted on heavy oak frame, with wrought-iron stay rods, ready for putting in place. Counter Shaft has machine-cut spur and pinion gears, plummer blocks, tight and loose pulleys, face plate with pin for varying stroke and stub connecting rod.

This Counter Shaft is very powerful and well made, and can be relied upon for satisfaction during a long period of most exacting service. For Pumps to be operated by Counter Shaft we recommend Figs. 514½, 339, 526½, 1212 (see index for pages). For Cylinders we refer to Figs. 1230, 1064, 1135, 904. For Working Heads to use in combination with above Cylinders for forcing water we recommend Figs. 978, 979, 446, 1127.

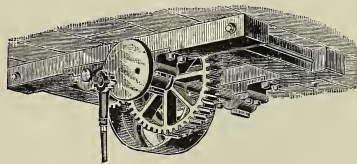


Fig. 650

Fig. 650. Sizes, Prices, Etc.

No	Stroke	Diameter Large Gear	Diameter Small Gear	Face of Gears	Pulleys, Each	*Will Operate	Cipher	Price
2	10 in.	22 in.	7¾ in.	3½ in.	22 x 5½ in.	{ 2¼ in. cyl., 300 ft. 3¼ " 200 " 4¾ " 150 " 5¾ " 75 "	Beef	\$125.00
2A	12, 16 or 18 in.	22 "	7¾ "	3½ "	22 x 5½ "		Cason	140.00
2B	20, 22 or 24 "	22 "	7¾ "	3½ "	22 x 5½ "		Casort	150.00
2C	26, 28 or 30 "	22 "	7¾ "	3½ "	22 x 5½ "		Chestad	160.00
2D	36 in.	22 "	7¾ "	3½ "	22 x 5½ "		Altruist	175.00

*Working Heads are practically strong enough to operate any suitable Pumps to such depth as they are adapted; this is told in connection with Pumps to which we refer

Goulds Hand and Power Pumping Apparatus

With Tight and Loose Pulleys

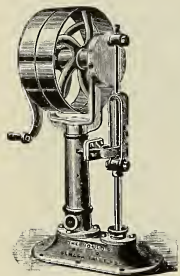


Fig. 872

This apparatus consists of iron bed with vertical column, which supports shaft with tight and loose pulleys, crank handle and face plate, these operating pitman and connecting rod (working through usual stuffing box), suitable for welding to plunger rod of pump cylinder in well. This can be worked by either manual or other power supplied from steam, gas or petroleum engine, if belt speed is not too high. Can tap suction for $1\frac{1}{2}$ -inch or 2-inch pipe, but always as below, unless otherwise ordered.

Fig. 872. Size, Price, Etc.

Stroke	Suction	Discharge	Well Rod	Pulleys, Each	*Lift and Force	Cipher	Price.
4, 5 or 6 in.	$1\frac{1}{2}$ in. pipe	$1\frac{1}{4}$ in. pipe	$\frac{5}{8}$ in.	15 x 3 in.	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in. cyl., } 50 \text{ ft.} \\ 3 \quad \quad \quad 40 \quad \quad \end{array} \right\}$	Waxlight	\$30.00

Cylinders like Figs. 1230, 1231, pages 68 and 69, or Figs. 514 $\frac{1}{2}$, 1192, pages 88 and 89, are required with this Pumping Apparatus, and cost extra.

*Depth of wells to which Pumping Apparatus may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Manual and Power Pumping Apparatus

With Pulley Fly-Wheel

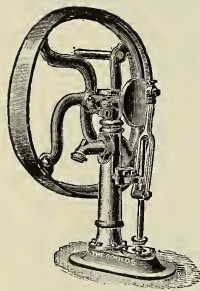


Fig. 547 $\frac{1}{2}$

Fig. 547 $\frac{1}{2}$ is the same in all respects as Fig. 547, but with flat rim fly-wheel to be worked by manual power, or belt transmission from any of the numerous and well-known gas or steam engines, under proper speed conditions. By substituting a flange for spout, pipe may be connected to convey water wherever desired.

Fig. 547 $\frac{1}{2}$. Size, Price, Etc.

Stroke	Suction	Discharge	Well Rod	Pulley Fly-Wheel	*Lift and Force	Cipher	Price
4, 5 or 6 in.	$1\frac{1}{2}$ in. pipe	$\left\{ \begin{array}{l} 1\frac{1}{4} \text{ in. pipe} \\ \text{and } 1 \text{ in. hose} \end{array} \right\}$	$\frac{5}{8}$ in.	36x4 $\frac{1}{2}$ in.	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in. cyl., } 75 \text{ ft.} \\ 3 \quad \quad \quad 60 \quad \quad \end{array} \right\}$	Lane	\$41.00
Same as above with air chamber.....						Leablow	44.00
Same as above with air chamber and cock spout:.....						Leabma	46.00

Cylinders like Figs. 1230, 1231, pages 68 and 69, or Figs. 514 $\frac{1}{2}$, 1192, pages 88 and 89, are required with this Pumping Apparatus and cost extra.

*Depth of wells to which Pumping Apparatus may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Goulds Power Pumping Apparatus

With Tight and Loose Pulleys

Fig. 589 represents our Pumping Apparatus for power only. The pinion shaft is made extra heavy and long enough to carry tight and loose pulleys, the size of which can be changed to meet any special requirements. An out-board bearing is not essential for the ordinary range of service, but in some cases it may be advantageous. Gear and pinion are all best steel with machine-cut teeth. Gas, steam, oil or electric power may be employed to operate these pumps.

Fig. 589. Sizes, Prices, Etc.

Stroke	Suction	Well Rod	Gear	Pulleys Each	*Lift and Force	Cipher	Price
6 in.	1½ in. pipe	⅝ in.	3 to 1	20 x 3 in.	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in. Cylinder, } 125 \text{ ft.} \\ 3 \text{ " " " } 100 \text{ " } \\ 3\frac{1}{2} \text{ " " " } 60 \text{ " } \\ 4 \text{ " " " } 45 \text{ " } \\ 4\frac{1}{2} \text{ " " " } 30 \text{ " } \end{array} \right.$	Warping Warplume Warproof	\$68.00 71.00 73.00
Same as above with air chamber.....							
Same as above with air chamber and cock spout.....							

Cylinders like Figs. 1230 and 1231, pages 68 and 69, or Figs. 514½ and 1192, pages 88 and 89, are required for this Pumping Apparatus and cost extra.

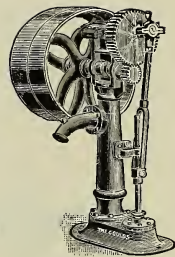


Fig. 589

Goulds Manual and Power Pumping Apparatus

With Gear and Pinion

Fig. 888 shows our Manual and Power Pumping Apparatus with gear and pinion, and cock spout with air chamber on same. The main gear and pinion are made of best steel with machine-cut teeth, well fitted, bright finished, and work with minimum friction. Water can be forced upward through top of air chamber or drawn through the spout.

Fig. 888. Sizes, Prices, Etc.

Stroke	Suction Fitted for	Well Rod	Gear	Pulley Fly-Wheel	*Lift and Force	Cipher	Price
6 in.	1½ in. pipe	⅝ in.	3 to 1	36x4½ in.	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in. Cylinder, } 125 \text{ ft.} \\ 3 \text{ " " " } 100 \text{ " } \\ 3\frac{1}{2} \text{ " " " } 60 \text{ " } \\ 4 \text{ " " " } 45 \text{ " } \\ 4\frac{1}{2} \text{ " " " } 30 \text{ " } \end{array} \right.$	Vexil Leabnug Lenado	\$70.00 68.00 65.00
Same as above with air chamber, no cock.....							
Same as above without air chamber or cock spout.....							

Cylinders like Figs. 1230 and 1231, pages 68 and 69, or Figs. 514½, 1192, pages 88 and 89, are required for this Pumping Apparatus and cost extra.

*Depth of Wells to which Pumping Apparatus may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

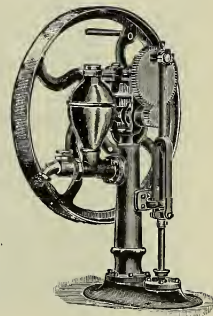


Fig. 888

Goulds Power Working Heads

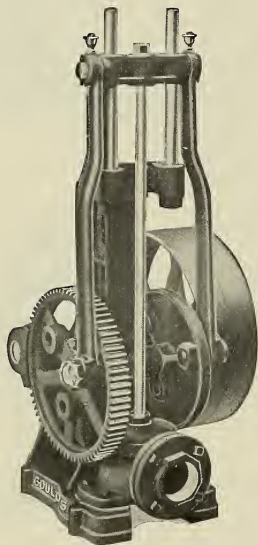


Fig. 1375, 10" Stroke

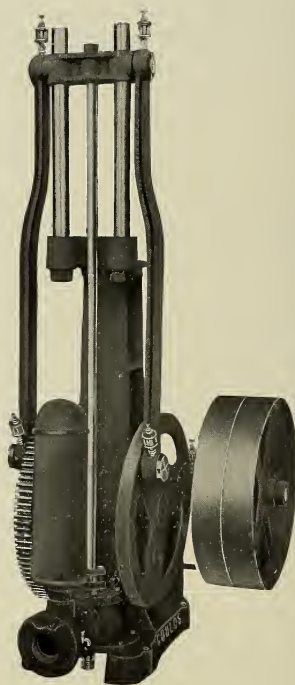


Fig. 1376, 20" Stroke

Specification

Fig. 1375, Deep Well Working Head, is very compact and exceptionally strong. The position of gears and plunger rod is such that the connecting rods move almost vertically on the up stroke, thereby lifting water with the least power.

By detaching connecting rods and removing stuffing box cap, a $4\frac{3}{4}$ -in. plunger can be drawn up through the 10-in. head, and a $5\frac{3}{4}$ -in. plunger through the 20-in. head.

The base and frame are cast in one piece; so designed that the head is perfectly rigid and steady when in operation.

The plunger rod and guide rods are polished steel. Gears machine cut. A gear guard covers the pinion. Bearings are babbitted and provided with oil cups. Stuffing box gland is brass, easily accessible for repacking.

These Working Heads can be used with any of our Artesian Well and Tubular Well Cylinders. Figs. 904 and 1135 are recommended for deep wells.

In ordering state sizes of pipe connections wanted and what thread is required on plunger rod.

Fig. 1376 is the same as 1375 except that it is provided with air chamber on discharge, as shown in cut.

Figs. 1375 and 1376. Sizes, Prices, Etc.

Stroke Adjustable	MAXIMUM SIZES OF PIPE		Geared	Tight and Loose Pulleys	FIG. 1375		FIG. 1376	
	Suction	Discharge			Cipher	Price	Cipher	Price
6, 8 or 10 in 12, 16 or 20 "	5 in. 6 "	3 in. 3 "	5 to 1 5 to 1	20 x 3 in. 26 x 4 "	Vivifij Vivifk	\$75.00 150.00	Viviflo Vivigan	\$80.00 160.00

Fig. 904, Brass Deep Well Cylinder, Sizes, Capacities, Prices, Etc.

Fig. 904 Diameter and Stroke	Figs. 1375, 1376 *Will Operate in Well	Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	Top and Bottom Connecting Rod	Maximum Outside Diameter	Square Wood Sucker Rod	Cipher	All Brass
$2\frac{3}{4}$ x 10 in.	275 feet	.257 gals.	35 revs. 8.9 gals.	3 in.	$3\frac{3}{8}$ in.	$1\frac{1}{2}$ in.	Dumpy	\$34.00
$2\frac{3}{4}$ x 16 "	275 "	.411 "	30 " 12.3 "	3 "	$3\frac{3}{8}$ "	$1\frac{1}{2}$ "	Whilom	36.00
$2\frac{3}{4}$ x 20 "	275 "	.514 "	30 " 15.4 "	3 "	$3\frac{3}{8}$ "	$1\frac{1}{2}$ "	Whihz	38.00
$3\frac{1}{4}$ x 10 "	200 "	.359 "	35 " 12.5 "	$3\frac{1}{2}$ "	$4\frac{1}{2}$ "	2 "	Dumpyb	45.00
$3\frac{1}{4}$ x 16 "	200 "	.574 "	30 " 17. "	$3\frac{1}{2}$ "	$4\frac{1}{2}$ "	2 "	Whim	48.00
$3\frac{1}{4}$ x 20 "	205 "	.718 "	25 " 17.95 "	$3\frac{1}{2}$ "	$4\frac{1}{2}$ "	2 "	Whimas	52.00
$3\frac{3}{8}$ x 10 "	150 "	.479 "	35 " 16.7 "	4 "	$5\frac{1}{8}$ "	$2\frac{1}{2}$ "	Dumqueel	67.50
$3\frac{3}{8}$ x 16 "	150 "	.764 "	30 " 22.9 "	4 "	$5\frac{1}{8}$ "	$2\frac{1}{2}$ "	Zylonkk	70.00
$3\frac{3}{8}$ x 20 "	200 "	.956 "	25 " 23.9 "	4 "	$5\frac{1}{8}$ "	$2\frac{1}{2}$ "	Whinger	75.00
$4\frac{1}{4}$ x 10 "	120 "	.614 "	35 " 21.4 "	$4\frac{1}{2}$ "	$5\frac{1}{8}$ "	$2\frac{1}{2}$ "	Dumqued	87.50
$4\frac{1}{4}$ x 16 "	120 "	.982 "	30 " 29.4 "	$4\frac{1}{2}$ "	$5\frac{1}{8}$ "	$2\frac{1}{2}$ "	Zylonle	90.00
$4\frac{1}{4}$ x 20 "	160 "	1.23 "	25 " 30.7 "	$4\frac{1}{2}$ "	$5\frac{1}{8}$ "	$2\frac{1}{2}$ "	Whirgh	95.00
$4\frac{3}{4}$ x 10 "	100 "	.767 "	35 " 26.8 "	$4\frac{3}{4}$ "	$6\frac{1}{8}$ "	3 "	Dumquell	120.00
$4\frac{3}{4}$ x 16 "	100 "	1.227 "	30 " 36.6 "	5 "	$6\frac{1}{8}$ "	3 "	Zylonm	127.50
$4\frac{3}{4}$ x 20 "	135 "	1.534 "	25 " 38.3 "	5 "	$6\frac{1}{8}$ "	3 "	Whistig	135.00
$5\frac{1}{4}$ x 10 "	70 "	1.12 "	35 " 39.2 "	6 "	$7\frac{1}{8}$ "	$3\frac{1}{2}$ "	Dubame	172.50
$5\frac{1}{4}$ x 16 "	70 "	1.79 "	30 " 53.7 "	6 "	$7\frac{1}{8}$ "	$3\frac{1}{2}$ "	Zylonna	180.00
$5\frac{1}{4}$ x 20 "	95 "	2.248 "	25 " 56.20 "	6 "	$7\frac{1}{8}$ "	$3\frac{1}{2}$ "	Whpus	195.00

*From surface of water in well to point of delivery.



Fig. 904

Goulds Power Differential Working Head

FOR OPERATING SINGLE-ACTING DEEP WELL CYLINDER.

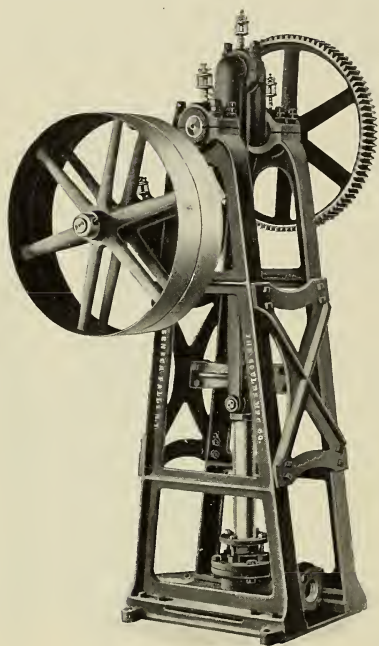


Fig. 1030, 14" Stroke

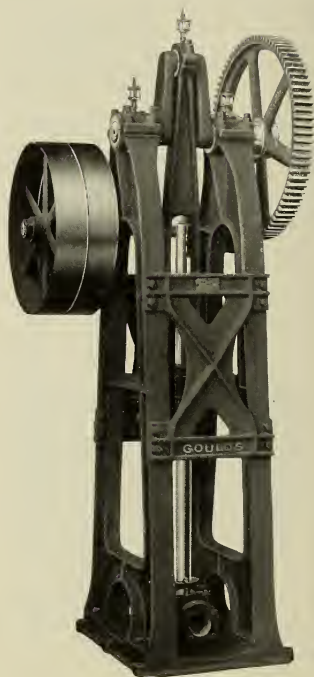


Fig. 1030, 24" Stroke

Specification

Fig. 1030—Power Differential Working Head, designed to operate our Single-Acting Deep Well Cylinder (Fig. 904) against heads specified in table given below.

Crank Shaft Steel casting (Open Hearth).

Bearings Crank shaft and pinion shaft bearings are of babbitt metal.

Gearing Gear and pinion are made of charcoal iron, machine cut.

Connecting Rods Have adjustable boxes, babbitted at crank end and bronze bushings at crosshead end.

Differential Plunger Equalizes the flow, thereby adding greatly to the efficiency of the Single-Acting Pump.

See page 77 for Sucker Rods, Couplings, etc.

Fig. 1030, Single-Acting Working Head, Sizes, Prices, Etc.

Stroke	MAXIMUM SIZE OF PIPE		Geared	Tight and Loose Pulleys	Cipher	Price
	Connecting	Discharge				
6 in.	4½ in.	3 in.	5 to 1	20 x 3 in.	Veerao	\$90.00
10 "	6 "	3 "	4 to 1	20 x 4 "	Vatful	120.00
14 "	6 "	3 "	5 to 1	26 x 4 "	Vaunted	180.00
16 "	6 "	3 "	5 to 1	26 x 4 "	Vectutd	200.00
24 "	6 "	3 "	5 to 1	30 x 5 "	Vesviel	300.00

Fig. 904, Brass Deep Well Cylinder, Sizes, Capacities, Prices, Etc.

Fig. 904 Dia. and Stroke	*Fig. 1030 Will Operate in Well	Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	Top and Bottom Connecting Pipe	Maximum Outside Diameter	Square Wood Sucker Rod	Cipher	All Brass
2¾ x 10 in.	275 feet	.257 gals.	35 revs., 8.9 gals.	3 in.	3⅞ in.	1½ in.	Dumpuy	\$34.00
2¾ x 14 "	275 "	.359 "	30 " 10.7 "	3 "	3⅞ "	1½ "	Endmoub	36.00
2¾ x 16 "	275 "	.411 "	30 " 12.3 "	3 "	3⅞ "	1½ "	Whilom	36.00
3¼ x 10 "	200 "	.359 "	35 " 12.5 "	3½ "	4½ "	2 "	Dumpyb	45.00
3¼ x 14 "	200 "	.503 "	30 " 15. "	3½ "	4½ "	2 "	Endmove	48.00
3¼ x 16 "	200 "	.574 "	30 " 17. "	3½ "	4½ "	2 "	Whim	48.00
3¼ x 24 "	265 "	.86 "	25 " 21. "	3½ "	4½ "	2 "	Whine	52.00
3¾ x 10 "	150 "	.478 "	35 " 16.7 "	4 "	5½ "	2¼ "	Dumceel	67.50
3¾ x 14 "	150 "	.669 "	30 " 20.6 "	4 "	5½ "	2¼ "	Endmuba	70.00
3¾ x 16 "	150 "	.764 "	30 " 22.9 "	4 "	5½ "	2¼ "	Zylonkk	70.00
3¾ x 24 "	200 "	1.15 "	25 " 28. "	4 "	5½ "	2¼ "	Whiners	75.00
4¼ x 10 "	120 "	.614 "	35 " 21.4 "	4½ "	5½ "	2½ "	Dumqued	87.50
4¼ x 14 "	120 "	.859 "	30 " 25.7 "	4½ "	5½ "	2½ "	Endmud	90.00
4¼ x 16 "	120 "	.982 "	30 " 29.4 "	4½ "	5½ "	2½ "	Zylonle	90.00
4¼ x 24 "	160 "	1.47 "	25 " 36. "	4½ "	5½ "	2½ "	Whinny	95.00
4¾ x 10 "	100 "	.767 "	35 " 26.8 "	5 "	6¼ "	3 "	Dumquill	120.00
4¾ x 14 "	100 "	1.073 "	30 " 32.1 "	5 "	6¼ "	3 "	Endmuck	127.50
4¾ x 16 "	100 "	1.227 "	30 " 36.6 "	5 "	6¼ "	3 "	Zylonm	127.50
4¾ x 24 "	135 "	1.84 "	25 " 46. "	5 "	6¼ "	3 "	Whippe	135.00
5¾ x 10 "	70 "	1.12 "	35 " 39.2 "	6 "	7¼ "	3½ "	Dubame	172.50
5¾ x 14 "	70 "	1.57 "	30 " 47.1 "	6 "	7¼ "	3½ "	Endnab	180.00
5¾ x 16 "	70 "	1.79 "	30 " 53.7 "	6 "	7¼ "	3½ "	Zylonna	180.00
5¾ x 24 "	95 "	2.70 "	25 " 67. "	6 "	7¼ "	3½ "	Dufabl	195.00

*From surface of water in well to point of delivery.



Fig. 904

Goulds Power Differential Working Head

FOR OPERATING SINGLE-ACTING DEEP WELL CYLINDER

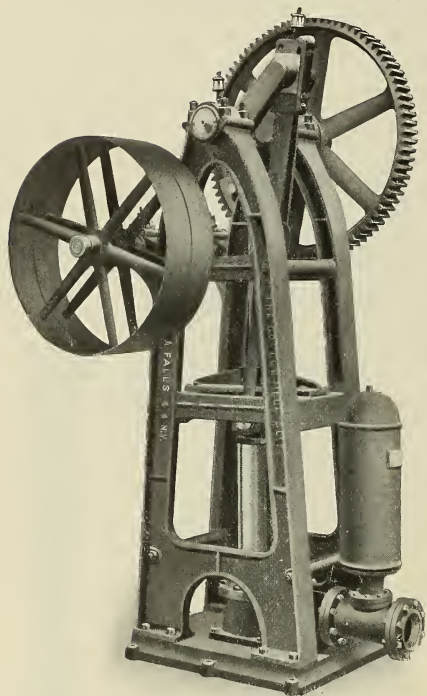


Fig. 971 A, 24" Stroke

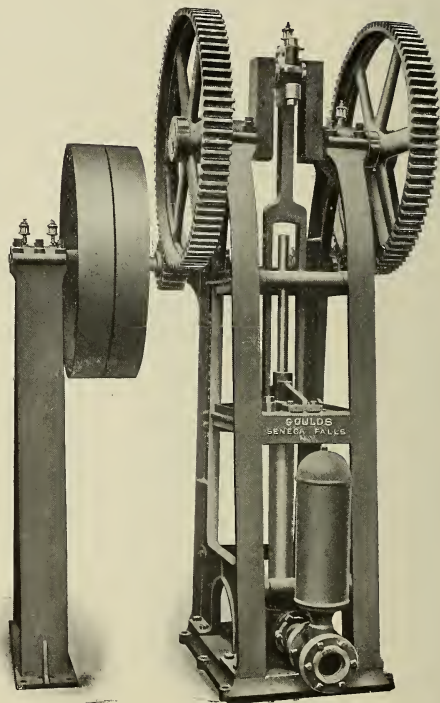


Fig. 971 C, 24" Stroke

Specification

Fig. 971—Power Differential Working Head, is designed to operate our Single-Acting Deep Well Cylinders, against heads specified in table given below. This type of Working Head is built in four different weights.

Crank Shaft Steel casting (Open Hearth).

Bearings Crank shaft and pinion shaft bearings are of babbit metal.

Gearing Of charcoal iron, machine cut. Figure 971 C is double geared, other sizes are single geared.

Connecting Rods Are forged steel with adjustable bronze boxes, marine type, at crank end and adjustable boxes, babbitted, at crosshead end.

Differential Plunger Equalizes the flow, thereby adding greatly to the efficiency of the Single-Acting Pump.

See page 77 for Sucker Rods, Couplings, etc.

Fig. 971. Single-Acting Working Head, Sizes, Etc.

Stroke	MAXIMUM SIZE OF PIPE		Geared	Pulleys Tight and Loose	Cipher
	Connecting	Discharge			
16 in.	8 in.	4 in.	5 to 1	30 x 6 in.	Writ
24 " A	8 "	5 "	5 to 1	36 x 6 "	Hendafa
24 " B	8 "	5 "	5 to 1	36 x 8 "	Hendago
24 " C	8 "	5 "	5 to 1	48 x 8½ "	Hendaho

Fig. 904. Deep Well Cylinder, Sizes, Capacities, Prices, Etc.

Fig. 904 Diameter and Stroke	Capacity per Stroke	Usual Speed and Capacity per Minute	*DEPTH OF WELL IN WHICH FIG. 971 WILL OPERATE FIG. 904 CYLINDER				Cipher	All Brass
			16-in.	24-in., A	24 in., B	24 in., C		
3¼ x 16 in.	.57 gals.	30 revs., 17 gals.	450 feet	.....	.....	.....	Whim	\$40.00
3¼ x 24 "	.86 "	25 " 21 "	.....	450 feet	.....	.....	Whine	52.00
3¼ x 16 "	.76 "	30 " 22 "	400 feet	.....	.....	.....	Zylonkk	70.00
3¼ x 24 "	1.15 "	25 " 28 "	.....	400 feet	.....	.....	Whiners	75.00
4¼ x 16 "	.98 "	30 " 29 "	350 feet	.....	.....	.....	Zylonle	90.00
4¼ x 24 "	1.47 "	25 " 36 "	.....	350 feet	.....	.....	Whinny	95.00
4¼ x 16 "	1.23 "	30 " 36 "	300 feet	.....	.....	.....	Zylonm	127.50
4¼ x 24 "	1.84 "	25 " 46 "	.....	300 feet	375 feet	.....	Whippe	135.00
5¼ x 16 "	1.80 "	30 " 53 "	200 feet	.....	.....	.....	Zylonna	180.00
5¼ x 24 "	2.70 "	25 " 67 "	.....	200 feet	250 feet	400 feet	Dufekl	195.00
6¼ x 16 "	2.50 "	30 " 74 "	150 feet	.....	.....	.....	Graview	280.00
6¼ x 24 "	3.72 "	25 " 92 "	.....	150 feet	200 feet	300 feet	Gratifa	300.00
7¼ x 16 "	3.26 "	30 " 97 "	125 feet	.....	.....	.....	Zylonoc	425.00
7¼ x 24 "	4.90 "	25 " 122 "	.....	125 feet	160 feet	250 feet	Willri	450.00
8¼ x 16 "	4.16 "	30 " 124 "	100 feet	.....	.....	.....	Gratijo	685.00
8¼ x 24 "	6.20 "	25 " 156 "	.....	100 feet	125 feet	200 feet	Groomug	725.00

*From surface of water in well to point of delivery.

Goulds Single-Acting Triplex Piston Pump

130 Pounds
Pressure

300 Feet
Elevation

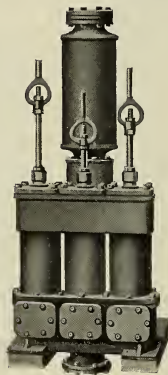
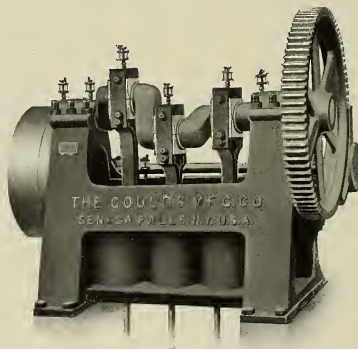


Fig. 1062, Size 8" x 10"

Specification

Fig. 1062—Single-Acting Triplex Piston Pump for Deep Open Wells, is designed to operate where the water is too low to be reached by suction from the surface. The frame which contains the driving parts of the Pump is placed on the surface and the cylinders in the well or pit. This outfit is built to stand a constant working pressure of 130 pounds or elevation of 300 feet.

Crank Shaft	Steel casting (Open Hearth).
Bearings	Crank shaft and pinion shaft bearings are of babbitt metal.
Gearing	The gear and pinion are made of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Cylindrical cast iron crossheads run in bored guides.
Connecting Rods	Have bronze boxes with strap head and wedge adjustment at crank end and bronze bushing at crosshead end.
Cylinders	Charcoal iron cast in one piece.
Pistons	Are of bronze with leather packing.
Piston Rods	Tobin bronze.
Stuffing Boxes and Glands	Are made wholly of bronze and fitted with fibrous packing.
Valves	Rubber discs on bronze grid seats and have cylindrically wound springs.
Oil Cups and Wrenches	Supplied with all Pumps.

For Table of Power required to operate, see page 180.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

Fig. 1251—Roller Guide, should be placed every 15 feet to keep the rods in proper alignment. Double Roller Guide, Welding Stub, Rods and Couplings, prices upon application.

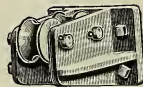


Fig. 1062. Sizes, Capacities, Etc.

PLUNGERS		Capacity one Revolution of Crank Shaft	Usual Speed and Capacity per Minute	SIZES OF PIPE		Sizes of Tension Rods	Geared	Tight and Loose Pulleys	Cipher
Diameter	Stroke			Suction	Discharge				
5 in.	8 in.	2.0 gals.	45 revs., 90 gals.	4 in.	3 in.	1 1/4 in.	5 to 1	30 x 5 in.	Elbem
6 1/2 "	8 "	3.4 "	45 " 153 "	5 "	4 "	1 1/2 "	5 to 1	30 x 6 "	Elbend
8 "	10 "	6.5 "	42 " 273 "	6 "	5 "	1 3/4 "	5 to 1	42 x 6 "	Elbida

Deep Well Steam Pumping Engines



Sizes 4 x 6
4 x 8
6 x 12

These Engines are adapted for non-flowing, Artesian, tubular, bored, dug or driven wells. Sizes 5 x 24 and larger are fitted with Brass Displacement Plunger. They are constructed so as to insure a steady flow of water, whether raised from shallow or deep wells, there being separate adjustments for the upward and downward strokes; therefore a perfect travel of piston is obtained, without regard to the weight of the reciprocating parts.

The breaking of the pump poles, due to the sudden reversal motion, is avoided in our Deep Well Engines, as the adjustment can be so made that the reversal motion will be slow and easy at either end, thus allowing the Pump to properly fill.

Fig. 1057. Sizes, Prices, Etc.

STEAM CYLINDER		Steam Pipe	Exhaust Pipe	STEAM END ONLY	
Diameter	Stroke			Cipher	Price
4 in.	6 in.	¾ in.	¾ in.	Moazig	\$ 60.00
4 "	8 "	¾ "	¾ "	Mobors	75.00
6 "	12 "	¾ "	¾ "	Mobux	150.00
6 "	24 "	¾ "	1 "	Mobaca	225.00
5 "	36 "	¾ "	1 "	Mobadu	250.00
6 "	24 "	1 "	1 ¼ "	Mobafs	250.00
6 "	36 "	1 "	1 ¼ "	Mobago	300.00
7 "	24 "	1 ¼ "	1 ½ "	Mobick	300.00
8 "	36 "	1 ¼ "	1 ½ "	Mobopa	315.00
8 "	24 "	1 ¼ "	1 ½ "	Moboqu	315.00
8 "	36 "	1 ¼ "	1 ½ "	Mobuda	325.00
9 "	24 "	1 ½ "	2 "	Mobuel	325.00
9 "	36 "	1 ½ "	2 "	Mobufu	350.00
10 "	24 "	1 ½ "	2 "	Mobugs	350.00
10 "	36 "	1 ½ "	2 "	Mobuim	375.00
11 "	24 "	2 "	2 ½ "	Mobuig	415.00
11 "	36 "	2 "	2 ½ "	Mobuka	450.00
12 "	24 "	2 "	2 ½ "	Mobulm	450.00
12 "	36 "	2 "	2 ½ "	Mobumo	500.00
14 "	24 "	2 "	2 ½ "	Mobund	675.00
14 "	36 "	2 "	2 ½ "	Moburt	750.00

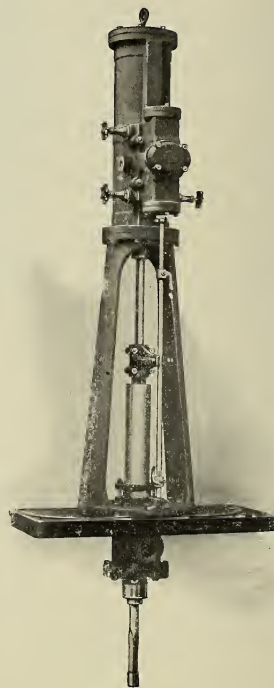


Fig. 1057

Sizes 5 x 24 and Larger

Goulds "Universe" Hand Force Pump

For House or Drive Well Use

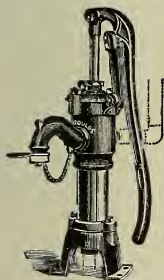


Fig. 1168

Fig. 1168 is an easy working, compact and substantial Hand Force Pump, well adapted for house pumping, furnishing water either at spout or through opening at back to storage tank. Also for outdoor use over drive wells, etc. We offer these pumps with oil polished iron cylinder and nickel-plated brass cylinder. Both iron and brass cylinder pumps have brass cased plunger rod, brass gland and revolving bearer attached with through bolts. Brass Cylinder Pump has galvanized plunger. When so ordered, spout is provided with shut-off cap, attached by swivel and chain.

Fig. 1169 differs from Fig. 1168 only in that it carries brass-fitted compression cock spout.

Either Pump fitted for lead pipe suction at slight extra charge if so ordered.

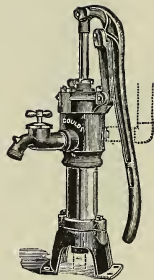


Fig. 1169

Fig. 1168. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	DISCHARGES		IRON		NICKEL-PLATED, BRASS CYLINDER	
					Spout	Back Outlet	Cipher	Price	Cipher	Price
2	2½ in.	4 in.	.09 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	Maltyot	\$7.50	Vibreel	\$10.00
6	3½ "	4 "	.17 "	1½ "	1 "	1 "	Maltyis	10.00	Maltynl	12.50

Fig. 1169. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	DISCHARGES		IRON		NICKEL-PLATED, BRASS CYLINDER	
					Spout	Back Outlet	Cipher	Price	Cipher	Price
2	2½ "	4 in.	.09 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	Mamar	\$10.00	Vibreel	\$12.50
6	3½ "	4 "	.17 "	1½ "	1 "	1 "	Mamel	12.50	Mamemo	15.00

Goulds House Force Pump

With Check Valve and Revolving Fulcrum

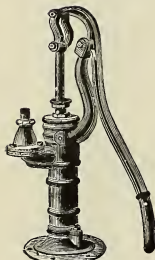


Fig. 390

Fig. 390 represents our House Force Pump on base with upper check valve discharge. It has brass-cased piston rod, working through brass gland and attached to lever by links.

Fig. 391 represents our House Force Pump on plank, with upper check valve discharge. It has brass-cased piston rod, working through brass gland and attached to lever by links. Pump furnished without plank at fifty cents less list. These figures represent a very popular style of Force Pumps for house use over sink, for tank pumping, etc. Below we list with Polished Iron Cylinder, Brass-Lined Cylinder and Brass Body Cylinder. Special Brass Pumps made to order. Pump Cylinder can be emptied of water by raising lever to extreme height, thus tripping valves.

Regular fitting, Iron Pipe. Fitted for lead pipe to order.

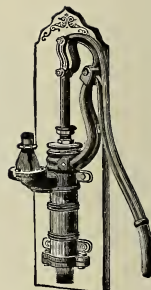


Fig. 391

Fig. 390. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	60 ft.	Child	\$9.00	Holejim	\$11.50	Cart	\$13.50
2	2½ "	6 "	.13 "	1¼ "	1¼ "	60 "	Chind	9.50	Holekad	12.00	Drum	14.00
4	3 "	6 "	.18 "	1¼ "	1¼ "	60 "	Cited	11.00	Holeklg	13.50	Dry	16.00
6	3½ "	7½ "	.31 "	1½ "	1½ "	40 "	Curdy	17.00	Hoopist	20.50	Cured	24.00
8	4 "	7½ "	.41 "	2 "	1½ "	40 "	Cure	18.00	Hoopltu	23.00	Curfue	30.00

Fig. 391. Sizes, Prices, Etc.

No	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	60 ft.	Chime	\$9.00	Hoopitux	\$11.50	Case	\$13.50
2	2½ "	6 "	.13 "	1¼ "	1¼ "	60 "	Chippy	9.50	Hoopiva	12.00	Ducat	14.00
4	3 "	6 "	.18 "	1¼ "	1¼ "	60 "	City	11.00	Hoopiwa	13.50	Duchy	16.00
6	3½ "	7½ "	.31 "	1½ "	1½ "	40 "	Curl	17.00	Hoopja	20.50	Current	24.00
8	4 "	7½ "	.41 "	2 "	1½ "	40 "	Curly	18.00	Hoopjil	23.00	Currier	30.00

*Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

Goulds House Force Pumps

With Air Chamber and Revolving Fulcrum

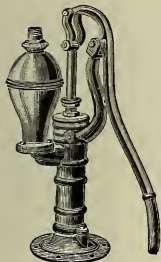


Fig. 392

Fig. 392 represents our House Force Pump on base, having upward discharge air chamber and brass cased rod working through brass gland and attached to lever by links.

Fig. 393 represents our House Force Pump on plank, having upward discharge air chamber and brass cased rod working through brass gland and attached to lever by links. Pumps furnished without plank at 50 cents less list.

These are most popular styles of Force Pumps for house use, for tank pumping, etc.

Below we list them made with polished iron cylinder, brass-lined cylinder and brass body cylinder. Special Brass Pumps made to order.

Pump cylinder may be emptied of water by raising lever to extreme height, thus tripping valve.

Regular fitting, iron pipe. Fitted for lead pipe to order.

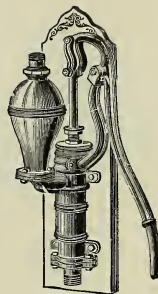


Fig. 393

Fig. 392. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	75 ft.	Carviol	\$9.50	Hoopjot	\$12.00	Carvkog	\$14.00
2	2½ "	6 "	.13 "	1¼ "	1¼ "	75 "	Chirp	10.00	Hoopjug	12.50	Duck	14.50
4	3 "	6 "	.18 "	1¼ "	1¼ "	75 "	Cavil	12.00	Hourly	14.50	Due	17.00
6	3½ "	7½ "	.31 "	1½ "	1½ "	50 "	Vacancy	19.00	Hourmo	22.50	Vacate	26.00
8	4 "	7½ "	.41 "	2 "	1½ "	50 "	Vacant	20.00	Hournal	25.00	Vacatid	32.00

Fig. 393. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	75 ft.	Carvman	\$9.50	Houros	\$12.00	Buoma	\$14.00
2	2½ "	6 "	.13 "	1¼ "	1¼ "	75 "	Chop	10.00	Houroto	12.50	Dual	14.50
4	3 "	6 "	.18 "	1¼ "	1¼ "	75 "	Clam	12.00	Houruba	14.50	Duel	17.00
6	3½ "	7½ "	.31 "	1½ "	1½ "	50 "	Vaccary	19.00	Hourve	22.50	Vacuate	26.00
8	4 "	7½ "	.41 "	2 "	1½ "	50 "	Vaccine	20.00	Hutcka	25.00	Vacuaso	32.00

*Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

Goulds House Force Pumps

With Air Chamber, Cock Spout and Revolving Fulcrum

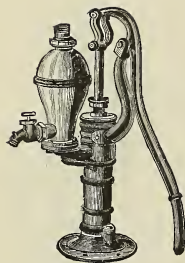


Fig. 394

Fig. 394 represents our Hand Force Pump on base with double discharge air chamber and cock.

Fig. 395 represents our Hand Force Pump on plank, with double discharge air chamber and cock spout. Furnished without plank at fifty cents less list.

Figs. 394 and 395 are exceedingly popular Force Pumps for house use over kitchen sinks. By opening or closing the cock, Pump is made to deliver either at the spout or to storage tank above, as desired. Also popular for stable and out-door use. Pump cylinder can be emptied to prevent freezing by raising lever to extreme height, thus tripping the valve.

Below we list these Pumps, made with Polished Iron Cylinders, with Brass-Lined and with Brass Body Cylinder. Special Brass Pumps made to order.

Regular fitting, iron pipe. Fitted for lead pipe to order.

Fig. 394. Sizes, Prices, Etc.

No.	Diameter Cylinder		Stroke	Capacity per Stroke	Suction	DISCHARGES		*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER			
						Top of Air Chamber	Nose of Cock		Cipher	Price	Cipher	Price	Cipher	Price		
0	2	in.	6	in.	.08 gal.	1	in. pipe	1	in. pipe	75 ft.	Diggub	\$12.00	Hutckig	\$14.50	Digha	\$16.50
2	2½	"	6	"	.13 "	1¼	"	1	"	75 "	Drone	12.50	Hutckos	15.00	Duger	17.00
4	3	"	6	"	.18 "	1¼	"	1	"	75 "	Dross	14.50	Hutckul	17.00	Duke	19.50
6	3½	"	7½	"	.31 "	1½	"	1	"	50 "	Cut	21.50	Hutbac	25.00	Cutlas	28.50
8	4	"	7½	"	.41 "	2	"	1½	"	50 "	Cycle	22.50	Hutbil	27.50	Cygnat	34.50



Fig. 395

Fig. 395. Sizes, Prices, Etc.

No.	Diameter Cylinder		Stroke	Capacity per Stroke	Suction	DISCHARGES		*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER			
						Top of Air Chamber	Nose of Cock		Cipher	Price	Cipher	Price	Cipher	Price		
C	2	in.	6	in.	.08 gal.	1	in. pipe	1	in. pipe	75 ft.	Dighim	\$12.00	Hutbims	\$14.50	Dight	\$16.50
2	2½	"	6	"	.13 "	1¼	"	1	"	75 "	Drop	12.50	Hutbino	15.00	Duly	17.00
4	3	"	6	"	.18 "	1¼	"	1	"	75 "	Drove	14.50	Hutbore	17.00	Dumb	19.50
6	3½	"	7½	"	.31 "	1½	"	1	"	50 "	Curt	21.50	Hutbud	25.00	Curtail	28.50
8	4	"	7½	"	.41 "	2	"	1½	"	50 "	Curve	22.50	Hutbwo	27.50	Curved	34.50

*Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

Goulds House Force Pumps

With Double Discharge Air Chamber and Revolving Fulcrum

Fig. 398 represents our House Force Pump on base, with horizontal discharge air chamber. The brass cased piston rod works through brass gland and is attached to lever by links.

Fig. 399 represents our House Force Pump on plank, with horizontal discharge air chamber. Brass cased piston rod works through brass gland and is attached to lever by links. Furnished without plank at 50 cents less list.

These pumps are extremely popular for house pumping, being often set over kitchen sink. Also for filling house tanks; and in warm climates used out of doors. Pump cylinder can be emptied of water by raising lever to extreme height, thus tripping valve.

Below we list with Polished Iron Cylinder, Brass-Lined Cylinder and Brass Body Cylinder. Special Brass Pumps made to order. Regular fitting, iron pipe. Fitted for lead pipe to order.



Fig. 398

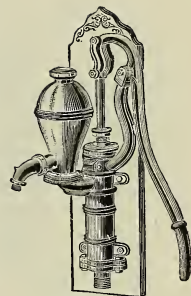


Fig. 399

Fig. 398. Sizes, Prices, Etc.

No	Diameter Cylinder	Stroke	Capacity Per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. hose	75 ft.	Dighyer	\$10.50	Hutcat	\$13.00	Dinhus	\$15.00
2	2½ "	6 "	.13 "	1¼ "	1 "	75 "	Chuck	11.00	Hutcase	13.50	Dunac	15.50
4	3 "	6 "	.18 "	1¼ "	1 "	75 "	Clamy	13.00	Hutcela	15.50	Dunce	18.00
6	3½ "	7½ "	.31 "	1½ "	1 "	50 "	Vagous	20.00	Idlist	23.50	Vagrant	27.00
8	4 "	7½ "	.41 "	2 "	1 "	50 "	Vagrancy	21.00	Idlite	26.00	Vague	33.00

Fig. 399. Sizes, Prices, Etc.

No	Diameter Cylinder	Stroke	Capacity Per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	6 in.	.08 gal.	1 in pipe	1 in. hose	75 ft.	Dinib	\$10.50	Idlive	\$13.00	Dinite	\$15.00
2	2½ "	6 "	.13 "	1¼ "	1 "	75 "	Churn	11.00	Idljay	13.50	Dupe	15.50
4	3 "	6 "	.18 "	1¼ "	1 "	75 "	Clamper	13.00	Idljbs	15.50	Dusk	18.00
6	3½ "	7½ "	.31 "	1½ "	1 "	50 "	Vailers	20.00	Idljocs	23.50	Vain	27.00
8	4 "	7½ "	.41 "	2 "	1 "	50 "	Vailing	21.00	Idljugs	26.00	Vainly	33.00

*Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

Goulds Improved Brass House Force Pump

On Iron Frame With Revolving Lever

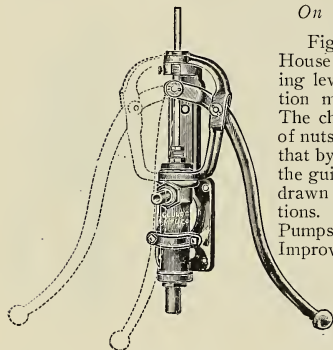


Fig. 1122

Fig. 1122 represents our Improved Brass House Force Pump on iron frame with revolving lever. Lever may be moved to any position most convenient to operate the Pump. The change of position involves no removing of nuts and bolts. The Pump is so constructed that by releasing one set screw and unscrewing the guide bushing and cap, the plunger may be drawn out without disturbing the pipe connections. This is claimed as a feature of many Pumps of this kind, but is only true in Goulds Improved House Force Pump.

Fig. 1241 represents the same Pump with air chamber.

We can fit both suction and discharge for either hose or iron pipe if so ordered, but regularly fit as given in our table below.

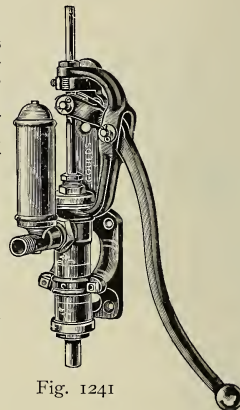


Fig. 1241

Fig. 1122. Size, Price, Etc.

Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	Cipher	Brass
1 $\frac{1}{8}$ in.	3 $\frac{1}{2}$ in.	.04 gal.	1 in. lead pipe	1 in. gas pipe	50 ft.	Fustko	\$10.00

Fig. 1241. Size, Price, Etc.

Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	Cipher	Brass
1 $\frac{1}{8}$ in.	3 $\frac{1}{2}$ in.	.04 gal.	1 in. lead pipe	$\frac{3}{4}$ in. hose	75 ft.	Maltud	\$14.00

*Total lift and force from water to point of delivery, Pump not more than 25 feet above water.

Goulds House Force Pump

With Crank Shaft and Fly Wheel

Fig. 1243 represents a Suction and Force Pump, arranged with crank shaft and fly-wheel.

Recognizing the fact that lever pumps are rarely, if ever, worked to their full length of stroke and that many prefer the crank motion, we have been enabled to shorten the stroke and yet to obtain the same results as from a longer stroke lever Pump, operated in the usual manner.

The addition of cock in air chamber permits water being discharged at point of operation as well as at a distance removed.

Fig. 1243. Sizes, Prices, Etc.

No	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	DISCHARGES		IRON		BRASS-LINED	
					Top of Air Chamber	Nose of Cock	Cipher	Price	Cipher	Price
2	2½ in.	2½ in.	.05 gal.	1¼ in. pipe	1¼ in. pipe	1 in. hose	Napklo	\$20.50	Naplot	\$23.00
4	3 in.	2½ in.	.08 "	1¼ "	1¼ "	1 "	Naplig	22.50	Numef	25.00

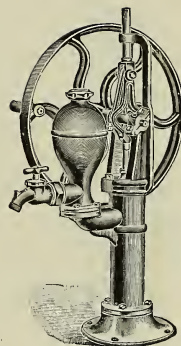


Fig. 1243

Goulds Double-Acting House Force Pump

With Crank Shaft and Fly Wheel

The Pump represented herewith is but a modification of our new style "Atlantic" Double-Acting Suction and Force Pump, arranged with crank shaft and fly-wheel. Cock in spout permits discharge to be made from top of air chamber to tank above or wherever desired.

The Valves, of a new and improved style, are all grouped in valve box in front and easy of access.

Plugs are provided for emptying Pump of water in cold weather.

Fig. 1242. Size, Price, Etc.

No	Diameter Cylinder	Stroke	Capacity per Revolution	Suction	DISCHARGES		IRON		BRASS-LINED	
					Top of Air Chamber	Nose of Cock	Cipher	Price	Cipher	Price
4	3 in.	2½ in.	.15 gal.	1½ in. pipe	1½ in. pipe	1 in. hose	Napjat	\$32.50	Napkil	\$35.00

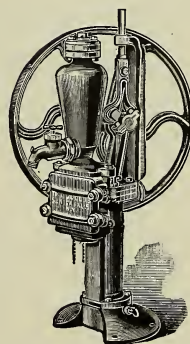


Fig. 1242

Goulds House Force Pumps

Mounted on Plank, Right or Left Handed

Fig. 440 represents our Single-Acting Suction and Force Pump, with brass-cased plunger rod, pitman and guide, mounted on plank, for indoor use, and can be made either right or left handed.

It is generally employed for lifting water from wells or cisterns and forcing it up into more elevated parts of the house for bath-rooms, tanks, etc. Plumbers, wishing to attach copper air chambers, usually select this style. The check valve can be removed and air chamber substituted without extra fitting.

Fig. 441 represents the same Pump with the addition of an air chamber which insures a continuous stream of water and relieves the pipe from the concussion of the water.

Brass Cylinder Pumps have Brass Plungers.

Brass Air Chambers and All-Brass Pumps made to order.

Pumps furnished without planks, \$1.00 less list.

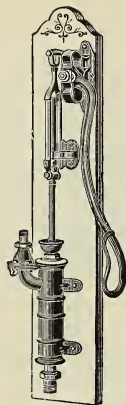


Fig. 440



Fig. 441

Fig. 440. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	7 in.	.09 gal.	1 in. pipe	1 in. pipe	80 ft.	Flit	\$15.00	Lenafx	\$17.50	Dyer	\$20.00
2	2½ "	7 "	.15 "	1¼ "	1¼ "	60 "	Float	15.50	Lenagy	18.00	Eacher	20.50
3	2¾ "	7 "	.18 "	1½ "	1½ "	60 "	Flock	16.00	Lenagzu	19.00	Eady	22.00
4	3 "	7 "	.21 "	1¾ "	1¾ "	60 "	Flog	16.50	Lenahow	20.00	Eager	23.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	40 "	Flopa	20.00	Lenahud	24.00	Eagerly	28.00
6	3½ "	7 "	.29 "	1½ "	1½ "	40 "	Flora	22.00	Lenahyx	26.50	Earing	32.00

Fig. 441. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	7 in.	.09 gal.	1 in. pipe	1 in. pipe	100 ft.	Floss	\$17.00	Lenaid	\$19.50	Earn	\$22.00
2	2½ "	7 "	.15 "	1¼ "	1¼ "	75 "	Flour	17.50	Lenafu	20.00	Earth	22.50
3	2¾ "	7 "	.18 "	1½ "	1½ "	75 "	Flout	18.00	Lenajoe	21.00	Earwig	24.00
4	3 "	7 "	.21 "	1¾ "	1¾ "	75 "	Flow	18.50	Listmae	22.00	Ease	25.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	50 "	Flown	23.00	Listmic	27.00	Easel	31.00
6	3½ "	7 "	.29 "	1½ "	1½ "	50 "	Fluid	25.00	Listmoq	29.50	Easily	35.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

Goulds House Force Pumps

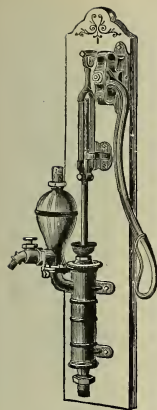


Fig. 442

Fig. 442 represents our House Force Pump with air chamber and cock through which water can be drawn at pump. This cock spout can be exchanged for brass tube, cut for iron pipe, at \$1.50 less list.

Pumps furnished without plank, \$1.00 less list.

Fig. 281 represents a House Force Pump adapted for deep wells or any place where it is desired to operate Pump at some distance above water. The following should be observed in placing these Pumps: At, say, 15 or 20 feet from bottom of well secure Pump to a timber or plank. At convenient height above locate lever and spout air chamber. Connect the air chamber above with the one below by pipe. Join the stub end attached to the lever to the stub end of the Pump by the necessary length of rod.

When ordered without spout air chamber, a deduction of \$1.00 in list will be made.

Brass Air Chamber and All-Brass Pumps made to order.

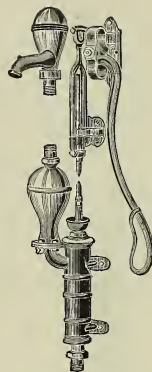


Fig. 281

Fig. 442. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	DISCHARGES		*Lift and Force	IRON		BRASS-LINED		BRASS-CYL.	
					Top of Air Chamber	Nose of Cock		Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	7 in.	.09 gal.	1 in. pipe	1 in. pipe	1 in. hose	100 ft.	Fluke	\$19.50	Hipluc	\$22.00	Fog	\$24.50
2	2½ "	7 "	.15 "	1¼ "	1¼ "	1 "	75 "	Flume	20.00	Hipluda	22.50	Foil	25.00
3	3¼ "	7 "	.18 "	1¼ "	1¼ "	1 "	75 "	Flung	20.50	Hiplufd	23.50	Foiler	26.50
4	3 "	7 "	.21 "	1¼ "	1¼ "	1 "	75 "	Flush	21.00	Hipluga	24.50	Fold	28.00
5	3¼ "	7 "	.25 "	1½ "	1½ "	1 "	50 "	Flute	26.00	Hipluhu	30.00	Folder	31.00
6	3½ "	7 "	.29 "	1½ "	1½ "	1 "	50 "	Flusha	28.00	Himal	32.50	Foliage	38.00

Fig. 281. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYL.	
							Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	7 in.	.09 gal.	1 in. pipe	1 in. pipe	75 ft.	Dandy	\$17.00	Himeta	\$19.50	Holeci	\$22.00
2	2½ "	7 "	.15 "	1¼ "	1¼ "	50 "	Dane	17.50	Himevo	20.00	Holedo	22.50
3	3¼ "	7 "	.18 "	1¼ "	1¼ "	50 "	Danker	18.00	Himfa	21.00	Holefu	24.00
4	3 "	7 "	.21 "	1¼ "	1¼ "	50 "	Darell	18.50	Himfig	22.00	Holega	25.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	35 "	Dared	23.00	Himgal	27.00	Holeho	31.00
6	3½ "	7 "	.29 "	1½ "	1½ "	35 "	Dark	25.00	Holeba	29.50	Holeiku	35.00

*Total lift and force from supply to point of delivery. Pumps not more than 25 feet above water.

Goulds House Force Pumps

For Hand and Machine Power

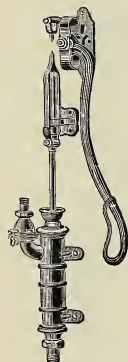


Fig. 480

Fig. 480 represents our House Force Pump, with pitman, guide and guide rod, but with disconnected rod above, adapted for deep wells or any place where it is desired to operate Pump at some distance above water.

The cylinder can be placed at the bottom of well or cistern, or within, say, fifteen or twenty feet (suction distance) of water. At convenient height above locate lever and join the stub end attached to the lever to the stub end of the Pump by connecting rod.

Brass Pumps made to order.

Fig. 714 represents our Single-Acting Force Pump without lever, bearer and cock, but with the pitman and guide arranged for power. Counter shafts, Figs. 1393, 711, 650, 650½, pages 106 and 107, may be employed to operate.

Brass Pumps made to order.

Pumps furnished without planks, \$1.00 less list.

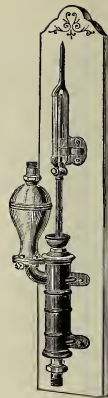


Fig. 714

Fig. 480. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
0	2 in.	7 in.	.09 gal.	1 in. pipe	1 in. pipe	80 ft.	Grass	\$14.00	Hencipa	\$16.50	Hewjost	\$19.00
2	2½ "	7 "	.15 "	1¼ "	1¼ "	60 "	Grate	14.50	Hewioc	17.00	Hewjuga	19.50
3	2¾ "	7 "	.18 "	1½ "	1½ "	60 "	Gray	15.00	Hewips	18.00	Highac	21.00
4	3 "	7 "	.21 "	1¾ "	1¾ "	60 "	Graze	15.50	Hewirt	19.00	Highil	22.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	40 "	Greet	19.00	Hewisa	23.00	Highob	27.00
6	3½ "	7 "	.29 "	1½ "	1½ "	40 "	Grew	21.00	Hewjon	25.50	Highud	31.00

Fig. 714. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED		BRASS CYLINDER	
							Cipher	Price	Cipher	Price	Cipher	Price
2	2½ in.	7 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe	75 ft.	Textok	\$17.00	Highso	\$19.50	Warry	\$22.00
3	2¾ "	7 "	.18 "	1½ "	1½ "	75 "	Thaw	17.50	Hiplid	20.50	Warsong	23.50
4	3 "	7 "	.21 "	1¾ "	1¾ "	75 "	Thorn	18.50	Hiplifa	22.00	Warsunk	25.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	50 "	Throb	23.00	Hiploe	27.00	Wart	31.00
6	3½ "	7 "	.29 "	1½ "	1½ "	50 "	Tick	25.00	Hiploma	29.50	Warted	35.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

Goulds House Force Pumps.

Mounted on Plank, With Crank and Balance Wheel

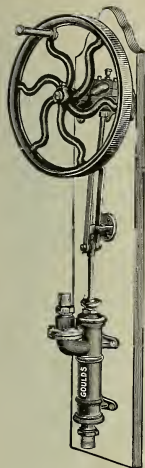


Fig. 712

Fig. 712 shows our Single-Acting House Force Pump, with check valve, mounted on plank, with crank shaft and balance wheel, which will be found a welcome substitute for the ordinary lever where any considerable quantity of water is to be raised.

Fig. 713 is the same Pump arranged with air chamber instead of check valve, and we recommend this form where water is to be lifted any distance above pump.

Cock added to air chamber at \$2.50 extra list.

We can also furnish our Double-Acting Pumps, like Figs. 271 and 273, page 130, mounted in the same way, if desired. We give lists on both kinds of pumps below.

In ordering, always state whether you want Single or Double-Acting Pump.

Pumps furnished without planks, \$1.00 less list.

Brass-Lined, Brass Cylinder or Brass Pumps made to order at proportionate prices.

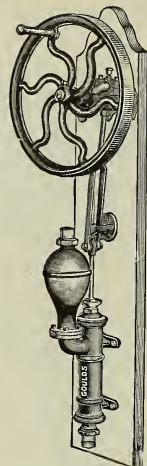


Fig. 713

Fig. 712. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Suction	Discharge	*Lift and Force	SINGLE-ACTING PUMP			DOUBLE-ACTING PUMP		
						Capacity per Stroke	Cipher	Iron	Capacity per Rev.	Cipher	Iron
2	2½ in.	7 in.	1¼ in. pipe	1¼ in. pipe	80 ft.	.15 gal.	Tabor	\$27.00	.30 gal.	Talon	\$20.00
3	2¾ " "	7 " "	1¼ " "	1¼ " "	60 " "	.18 " "	Tack	20.00	.36 " "	Tame	33.00
4	3 " "	7 " "	1¼ " "	1¼ " "	60 " "	.21 " "	Tagar	32.00	.43 " "	Tank	36.50
5	3¼ " "	7 " "	1½ " "	1½ " "	40 " "	.25 " "	Tail	35.00	.....	.....	.....
6	3½ " "	7 " "	1½ " "	1½ " "	40 " "	.29 " "	Tally	39.00	.58 " "	Tansy	43.00

Fig. 713. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Suction	Discharge	*Lift and Force	SINGLE-ACTING PUMP			DOUBLE-ACTING PUMP		
						Capacity per Stroke	Cipher	Iron	Capacity per Rev.	Cipher	Iron
2	2½ in.	7 in.	1¼ in. pipe	1¼ in. pipe	100 ft.	.15 gal.	Tareat	\$29.00	.30 gal.	Teamo	\$31.50
3	2¾ " "	7 " "	1¼ " "	1¼ " "	75 " "	.18 " "	Tartes	31.00	.36 " "	Tearap	35.50
4	3 " "	7 " "	1¼ " "	1¼ " "	75 " "	.21 " "	Task	34.50	.43 " "	Tenor	38.50
5	3¼ " "	7 " "	1½ " "	1½ " "	50 " "	.25 " "	Taxdet	38.00	.....	.....	.....
6	3½ " "	7 " "	1½ " "	1½ " "	50 " "	.29 " "	Teaba	42.00	.58 " "	Tentap	46.00

*Total lift and force from supply to point of delivery, Pumps not more than 25 feet above water.

Double-Acting House Force Pumps

Mounted on Plank. Right or Left Handed

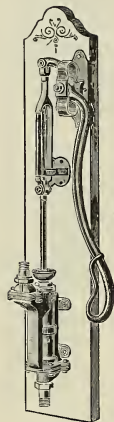


Fig. 271

Fig. 271 represents one of our well-known Double-Acting Force Pumps, mounted on plank, with check valve for house use. In explanation of a Double-Acting Pump would say that they lift and force water with both the upward and downward motions of the lever, giving double the quantity of water that a Single-Acting Pump of equal size would.

Fig. 273 represents one of our well-known Double-Acting Suction and Force Pumps, mounted on plank, with air chamber and cock spout. Can be arranged either right or left handed, and discharge may be made through top of air chamber or from spout.

Can furnish with plain air chamber for single or double discharge, or with check valve instead, at a reduction in price.

Pumps fitted for hot water with metallic valves at extra charge. Brass Cylinder and Brass Pumps made to order. Pumps furnished without planks, \$1.00 less list.

Fig. 271. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Revolution	Suction	Discharge	IRON		BRASS-LINED	
						Cipher	Price	Cipher	Price
0	2 in.	7 in.	.19 gal.	1 1/4 in. pipe	1 1/4 in. pipe	Clump	\$16.50	Muncud	\$19.00
1	2 1/4 "	7 "	.24 "	1 1/4 "	1 1/4 "	Coach	16.50	Muncyx	19.00
2	2 1/2 "	7 "	.30 "	1 1/4 "	1 1/4 "	Coast	17.00	Mundar	19.50
3	2 3/4 "	7 "	.36 "	1 1/4 "	1 1/4 "	Coated	19.00	Mundask	22.00
4	3 "	7 "	.43 "	1 1/2 "	1 1/4 "	Coax	21.00	Mundem	24.50
6	3 1/2 "	8 "	.67 "	1 1/2 "	1 1/2 "	Codex	25.00	Mustama	29.50
8	4 "	8 "	.87 "	2 "	2 "	Coiled	37.00	Mustet	42.00
10	4 1/2 "	8 "	1.10 "	2 1/2 "	2 1/2 "	Coin	50.00	Mustevo	55.00



Fig. 273

Fig. 273. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Revolution	Suction	DISCHARGES FITTED		*Lift and Force	IRON		BRASS-LINED	
					Top of Air Chamber	Nose of Cock		Cipher	Price	Cipher	Price
0	2 in.	7 in.	.19 gal.	1 1/4 in. pipe	1 1/4 in. pipe	1 in. hose	100 ft.	Verdict	\$21.00	Mustib	\$23.50
1	2 1/4 "	7 "	.24 "	1 1/4 "	1 1/4 "	1 "	75 "	Verdigr	21.00	Musticl	23.50
2	2 1/2 "	7 "	.30 "	1 1/4 "	1 1/4 "	1 "	75 "	Verdure	21.50	Mustjaw	24.00
3	2 3/4 "	7 "	.36 "	1 1/4 "	1 1/4 "	1 "	75 "	Verdure	23.50	Mustjib	26.50
4	3 "	7 "	.43 "	1 1/2 "	1 1/4 "	1 "	75 "	Verecun	25.50	Napidu	29.00
6	3 1/2 "	8 "	.67 "	1 1/2 "	1 1/2 "	1 "	50 "	Verge	31.00	Napiff	35.50
8	4 "	8 "	.87 "	2 "	2 "	1 "	50 "	Vergers	45.00	Napigs	50.00
10	4 1/2 "	8 "	1.10 "	2 1/2 "	2 1/2 "	1 "	40 "	Verging	58.00	Napiho	63.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

Goulds House Force Pumps

For Hand and Power

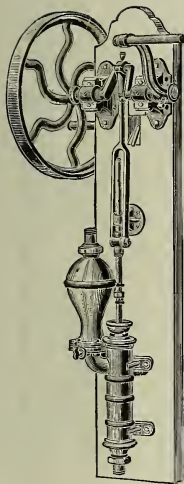


Fig. 449

Fig. 449 represents our Single-Acting Force Pump, on plank, with crank shaft, balance wheel and winch handle adapted for two to four men. When so ordered we can supply with 24-inch diameter, 3½-inch face pulley balance wheel for belt, at \$1.00 extra list.

Fig. 450 represents our Double-Acting Force Pump with crank shaft, balance wheel and winch handles, adapted for two to four men. When so ordered, we can supply with 24-inch diameter, 3½-inch face pulley balance wheel for belt, at \$1.00 extra list or with 36 x 4-inch, at \$2.50 extra list.

Suction and discharge always fitted for wrought-iron pipe, although we can fit for lead pipe if so ordered.

Can also fit these and other Pumps of this class with metallic valves throughout for hot or corrosive liquids. Brass pumps made to order. We deduct \$1.00 from list given below when planks are not furnished.

Fig. 449. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke.	Suction	Discharge	IRON		BRASS LINED	
						Cipher	Price	Cipher	Price
0	2 in.	7 in.	.09 gal.	1¼ in. pipe	1¼ in. pipe	Frith	\$37.00	Moonki	\$39.50
2	2½ "	7 "	.15 "	1¼ "	1¼ "	Friz	39.00	Moonlat	41.50
3	2¾ "	7 "	.18 "	1¼ "	1¼ "	Frock	39.50	Mostol	42.50
4	3 "	7 "	.21 "	1¼ "	1¼ "	Frog	40.00	Mostyi	43.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	Fromer	44.00	Motija	48.00
6	3½ "	7 "	.29 "	1½ "	1½ "	Front	48.00	Motiks	52.50

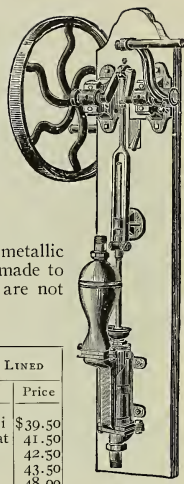


Fig. 450

Fig. 450. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Rev.	Suction	Discharge	Balance Wheel	*Lift and Force	IRON		BRASS LINED	
								Cipher	Price	Cipher	Price
2	2½ in.	7 in.	.30 gal.	1¼ in. pipe	1¼ in. pipe	24 in.	75 ft.	Full	\$40.00	Muncjo	\$42.50
3	2¾ "	7 "	.36 "	1¼ "	1¼ "	24 "	75 "	Fume	42.00	Muncku	45.00
4	3 "	7 "	.43 "	1½ "	1½ "	24 "	75 "	Funab	45.00	Muncia	48.50
6	3½ "	7½ "	.62 "	1½ "	1½ "	36 "	50 "	Fund	55.00	Muncme	59.50
8	4 "	7½ "	.82 "	2 "	2 "	36 "	50 "	Fur	65.00	Muncnv	70.00
10	4½ "	7½ "	1.03 "	2½ "	2½ "	36 "	40 "	Fursa	80.00	Muncob	85.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

Goulds Double-Acting House Force Pumps

Mounted on Plank and Fitted With Cock-Spout



Fig. 1233

Fig. 1233 represents our new Double-Acting House Force Pump, mounted on long plank, and provided with pitman and guide. Valves are brass, leather-faced, and being grouped in valve chest are easily accessible by removing front plate. Piston is double cup-leather packed. Cock-spout is provided, thus affording necessary means of closing spout discharge when desiring to pump through discharge at top of air chamber to tank or elsewhere. Pumps furnished without cock spout, \$2.00 less list, without plank, \$1.00 less list.

Fig. 1234 represents the same Pump, mounted on heavy plank, with crank shaft, plummer blocks, winch handle and fly-wheel, arranged for two to four men and capable of lifting or forcing large quantities of water. Pumps furnished without cock spout, \$2.00 less list, without plank, \$1.00 less list.

Fig. 1234, with 36 x 4 inch heavy pulley for belt substituted for either fly-wheel or handle at \$2.50 extra list.

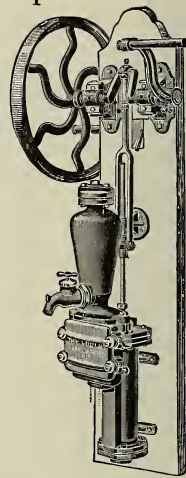


Fig. 1234

Fig. 1233. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Revolution	†Suction Fitted for	DISCHARGES FITTED		*Lift and Force	IRON		BRASS-LINED	
					Top of Air Chamber	Cock Spout		Cipher	Price	Cipher	Price
4	3 in.	6 in.	.37 gal.	1½ in. pipe	1½ in. pipe	1 in. hose	75 ft.	Meshub	\$30.00	Meslur	\$33.50
6	3½ "	6 "	.50 "	2 "	2 "	1 "	50 "	Meslu	37.50	Mesleer	42.50
8	4 "	6 "	.65 "	2 "	2 "	1 "	50 "	Meslwy	45.00	Mesleft	50.00

Fig. 1234. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Revolution	†Suction Fitted for	DISCHARGES FITTED		*Lift and Force	IRON		BRASS-LINED	
					Top of Air Chamber	Cock Spout		Cipher	Price	Cipher	Price
4	3 in.	6 in.	.37 gal.	1½ in. pipe	1½ in. pipe	1 in. hose	75 ft.	Moawa	\$45.00	Moonhat	\$48.50
6	3½ "	6 "	.50 "	2 "	2 "	1 "	50 "	Moone	55.00	Moonill	60.00
8	4 "	6 "	.65 "	2 "	2 "	1 "	50 "	Moongis	65.00	Moonja	70.00

†Suction and discharge can be fitted differently, but always sent as listed unless otherwise ordered.

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

Goulds Suction and Force Pumps

On Iron Frame, With Heavy Balance Wheel and Crank Shaft

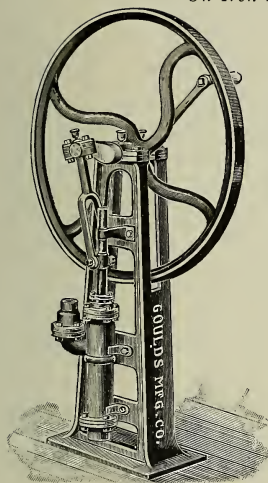


Fig. 1327, Single-Acting Force Pump, has strong cast iron frame, heavy balance wheel, with crank on end of shaft for hand use, iron cylinder, check valve on discharge, suction and discharge fitted for iron pipe. Can be used where water is not more than 25 feet below Pump.

Fig. 1328 is a double-acting Pump, arranged the same as Fig. 1327 above.

We can supply these Pumps with brass-lined, or all-brass cylinder, to order at extra price.

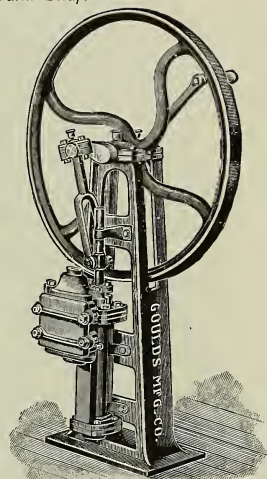


Fig. 1327

Fig. 1327. Sizes, Prices, Etc.

Fig. 1328

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	Cipher	Price
4	3 in.	7 in.	.214 gal.	1½ in. pipe	1½ in. pipe	75 ft.	Wryags	\$65.00
8	4 "	7 "	.381 "	2 "	2 "	50 "	Wryaht	75.00

Fig. 1328. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	Cipher	Price
4	3 in.	7 in.	.43 gal.	1½ in. pipe	1½ in. pipe	75 ft.	Wrecod	\$70.00
8	4 "	7 "	.76 "	2 "	2 "	50 "	Wrecoff	80.00

*Total lift and force from supply to point of delivery.

Goulds "New Duplex" Bronze Water Lifter

Pumping Soft Water to Tank and Elevating Exhaust Water

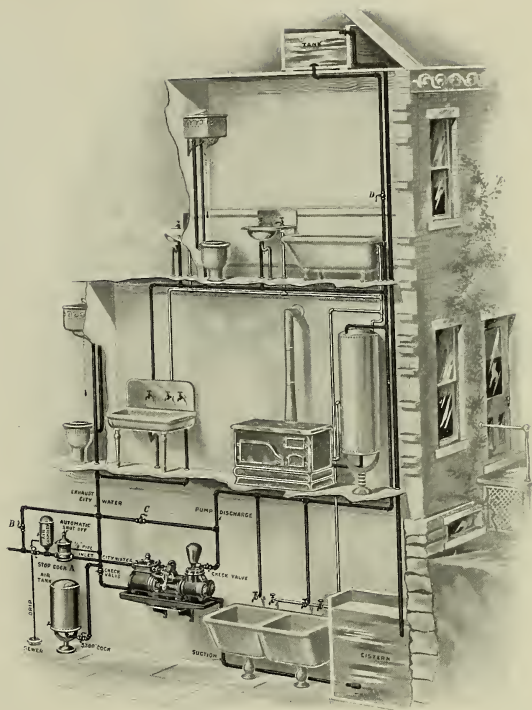
Gould's Economy Plan provides for use of city water at certain fixtures. To reach these fixtures, it is compelled to operate Lifter and pump proportionate amount of soft water to attic tank. From tank, soft water is piped to desired points.

We show in sketch exhaust city water piped to kitchen sink and closet tanks. This may be varied to suit requirements. In this system, controlling pipe for automatic shut-off valve is connected to city water exhaust pipe.

Air and Storage tank is connected to exhaust pipe near Lifter. This cushions discharge and holds in reserve a supply of water under pressure. An overflow pipe from tank is provided to return to cistern any excess of soft water pumped. A pipe with cocks ("B" "C") is provided, as shown in diagram, for connecting city water to all service pipes in case supply of soft water fails.

Sizes of Lifters, Fig. 1250, Recommended for Various Pressures

City Water Pressure Pounds	Exhaust Heads in feet	PUMP DISCHARGE HEADS IN FEET		
		25 ft.	35 ft.	50 ft.
25	15	No. 1 or 4	No. 1	No. 1
30	15 25	1 or 4 1 or 4	1 or 4 1 or 4	1 1
40	15 25 35	0 or 4 0 or 4 1 or 4	0 or 4 1 or 4 1 or 4	1 or 4 1 or 4 1 or 4
50	15 25 35	3 or 4 3 or 4 0 or 4	3 or 4 0 or 4 0 or 4	0 or 4 0 or 4 1 or 4



— PIPES SHOWN IN FULL LINE CONTAIN COLD WATER —
 — PIPES SHOWN IN LIGHT LINE CONTAIN HOT WATER —

Goulds "New Duplex" Bronze Water Lifter



Automatic
Shut-Off Valve.
Fig. 1379

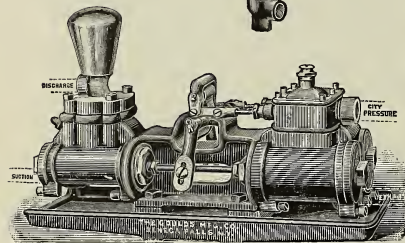


Fig. 1250

For Direct System or Tank Pumping

Fig. 1250, "New Duplex" Bronze Water Lifter, is a hydraulic pumping engine operated by city water pressure, for automatically pumping rain water to storage tank or direct to fixtures, or increasing city water pressure for high buildings.

Specification—Two Pump and Two Power Cylinders, each double-acting; all working parts bronze, easily accessible.

Cylinders, Valve Boxes, Air Chambers, Rocker Arms, Plunger Rods, etc., solid bronze.

Pistons—Bronze, crimped leather packed.

Valves—Bronze, leather faced.

Bed-plate and Center Support—Cast iron.

Iron brackets are provided to hold Lifter, and drip-plugs are furnished to prevent freezing.

These Lifters are regularly fitted for iron pipe connections, as listed below. Brass bent couplings for lead pipe furnished to order.

Fig. 1379—Automatic shut-off Valve is bronze throughout, leather packed. This Valve is placed on the city water inlet pipe near the Lifter, and connected to the Pump discharge by $\frac{1}{8}$ -inch controlling pipe. When a plumbing fixture is opened, the pressure on Pump discharge is relieved, which opens the automatic shut-off valve and starts the Lifter. When the fixture is closed, the increased pressure on Pump discharge closes the automatic shut-off valve, the Lifter stops and stands without pressure upon it. All strain is relieved, and all creeping and wasting of water avoided. Only by this controlling principle can direct pumping to fixtures be satisfactory.

On the preceding pages are shown two of the most common methods of installation with sizes of Lifters recommended for various pressures. When peculiar conditions are encountered, we invite correspondence and ask that full particulars be given.

Fig. 1250. Sizes, Prices, Etc.

No.	DIAMETER OF CYLINDERS		PIPE CONNECTIONS				AT 30 REVOLUTIONS PER MINUTE		Fig. 1250	
			Power End		Pump End					
	Power	Pump	*Supply	Exhaust	Suction	Discharge	Will Pump per Hour	Will Exhaust per Hour	Cipher	Price
0	2 in	1½ in.	½ in	¾ in.	¾ in.	½ in.	165 gals.	295 gals.	Rusefat	\$40.00
1	2½ "	1½ "	¾ "	¾ "	¾ "	½ "	165 "	460 "	Rusefel	40.00
3	2 "	2 "	½ "	¾ "	¾ "	¾ "	295 "	295 "	Rusefir	42.50
4	2½ "	2 "	¾ "	¾ "	¾ "	¾ "	295 "	460 "	Rusego	45.00

*If more than 10 feet of this pipe is required, a size larger than given in table should be used to avoid friction loss and consequent reduction of pressure.

Goulds Duplex Water Lifter

A Pump Operated by Water Pressure

Fig. 935, Duplex Water Lifter, is built in larger sizes and differs somewhat in design and details of construction from the "New Duplex," shown on page 136. The cylinders are brass-lined and both Pump cylinders are double-acting. All valves and working parts are brass.

Furnished with fibrous or metallic packed pistons, for hot water or acids, to order.

This Lifter is especially suitable for pumping soft water to tanks and where there is sufficient pressure the exhaust water may also be elevated if desired. It is also used for pumping city water to higher elevations than it will flow of its own pressure.

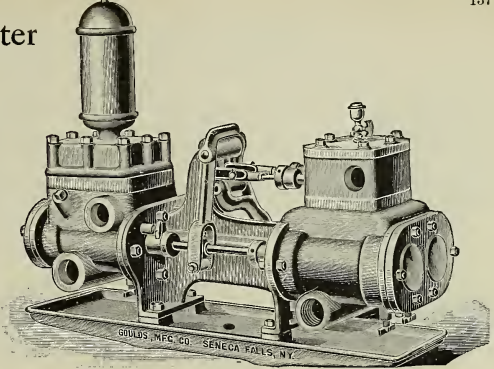


Fig. 935

Fig. 935. Sizes, Prices, Etc.

No	DIAMETER OF CYLINDERS		Stroke	SIZES OF PIPE CONNECTIONS				AT 30 REVOLUTIONS PER MINUTE		FIG. 935	
				Power End		Pump End		Will Pump per Hour	Will Exhaust per Hour	Cipher	Price
	Power	Pump		Supply	Exhaust	Suction	Discharge				
10	3 in.	2 in.	4 in.	1¼ in.	1½ in.	1¼ in.	1¼ in.	390 gals.	880 gals.	Worsepr	\$70.00
11	3 "	2½ "	4 "	1¼ "	1½ "	1½ "	1¼ "	610 "	880 "	Wrassid	75.00
12	3 "	3 "	4 "	1½ "	1½ "	1½ "	1¼ "	880 "	880 "	Wrather	80.00

Pumping Power of Fig. 935. Duplex Water Lifters

CITY WATER PRESSURE	Exhausting Freely Will Pump Cistern Water to Elevations as Given Below			Elevating Exhaust Water 15 Feet Will Pump Cistern Water to Elevations as Given Below			Exhausting Freely Will Pump City Water to Elevations as Given Below		
	No. 10	No. 11	No. 12	No. 10	No. 11	No. 12	No. 10	No. 11	No. 12
15 lbs.....	45 ft.	30 ft.	.....	25 ft.	.....	.....	90 ft.	60 ft.	40 ft.
20 ".....	60 "	40 "	.....	40 "	25 ft.	.....	120 "	80 "	50 "
25 ".....	75 "	50 "	35 ft.	55 "	35 "	25 ft.	.....	100 "	70 "
30 ".....	90 "	60 "	40 "	70 "	45 "	30 "	.....	120 "	80 "
35 ".....	105 "	70 "	45 "	85 "	55 "	35 "	.....	.....	90 "
40 ".....	.....	80 "	55 "	100 "	65 "	45 "	.....	.....	110 "
45 ".....	.....	90 "	60 "	.....	75 "	50 "	.....	.....	120 "
50 ".....	.....	100 "	70 "	.....	85 "	55 "	.....	.....	135 "
60 ".....	.....	.....	80 "	.....	105 "	70 "	.....	.....	.....
70 ".....	.....	.....	95 "	.....	.....	85 "	.....	.....	.....
80 ".....	.....	.....	110 "	.....	.....	95 "	.....	.....	.....

Goulds Improved Hydraulic Rams

Fig. 345. Sizes, Prices, Etc.

Size	Supply per Minute to Operate Ram	PIPES		Cipher	PRICE *Leather Valve
		Drive	Discharge		
No. 2	2 to 3 gals.	¾ in.	½ in.	Evade	\$9.00
" 3	2 to 4 "	1 "	½ "	Evan	11.00
" 4	3 to 7 "	1¼ "	¾ "	Event	14.00

*Leather Valve under Air Chamber.

Fig. 345½. Sizes, Prices, Etc.

Size	Supply per Minute to Operate Ram	PIPES		Cipher	PRICE *Leather Valve
		Drive	Discharge		
No. 2	2 to 3 gals.	¾ in.	½ in.	Exabit	\$9.00
" 3	2 to 4 "	1 "	½ "	Exabon	11.00
" 4	3 to 7 "	1¼ "	¾ "	Exabost	14.00
" 5	6 to 12 "	2 "	1 "	Exabub	22.00

*Leather Valve under Air Chamber.

Fig. 346½. Single Ram. Sizes, Prices, Etc.

Size	Supply per Minute to Operate Ram	PIPES		Cipher	PRICE *Brass Spring Valve
		Drive	Discharge		
No. 6	11 to 20 gals.	2½ in.	1¼ in.	Exabuck	\$45.00
" 7	18 to 36 "	3 "	1½ "	Exabude	80.00
" 8	30 to 60 "	4 "	2 "	Exacat	130.00

*Brass Spring Valve under Air Chamber.

Fig. 346. Double Ram. Sizes, Prices, Etc.

Size	Supply per Minute to Operate Ram	PIPES		Cipher	PRICE *Brass Spring Valve
		Drive	Discharge		
No. 6	22 to 40 gals.	2½ in.	1½ in.	Exalt	\$90.00
" 7	36 to 70 "	3 "	2 "	Excel	160.00
" 8	60 to 120 "	4 "	2½ "	Exert	260.00

*Brass Spring Valve under Air Chamber.

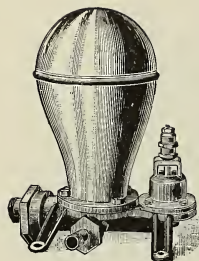


Fig. 345

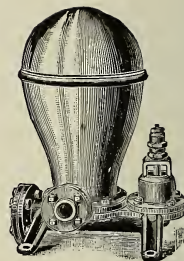


Fig. 345½

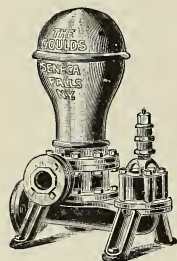


Fig. 346½

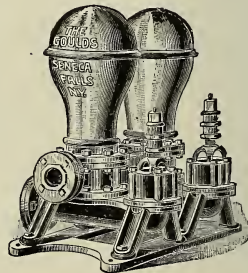


Fig. 346

Fig. 345 is fitted for iron or lead pipe; Fig. 345½, 346, 346½ for wrought-iron pipe only.

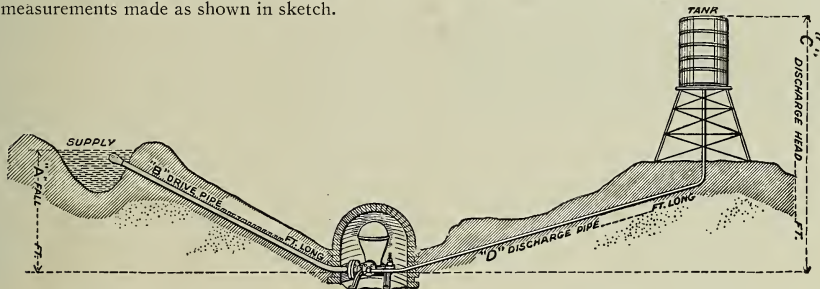
Goulds Improved Hydraulic Rams

For supplying Dwellings, Hotels, Factories, Railroad Stations, Stock Yards, Etc., with Running Water.

The Hydraulic Ram is an automatic device for elevating water. Wherever a flow of water with a gradual fall can be obtained, a portion of the water may be forced to a considerable height. The slight expense for first outlay and maintenance considered, renders them most desirable for supplying running water.

Goulds Improved Rams are the result of over forty years' experience in manufacture and practical use. All castings are strong and well proportioned. The air chambers are larger than those of other makes, which, with our improved design of bronze impetus valve and case, enables us to offer the most efficient and reliable Ram in the market.

Size of Ram Required. In order to select a Ram of suitable size, the following data must be obtained and measurements made as shown in sketch.



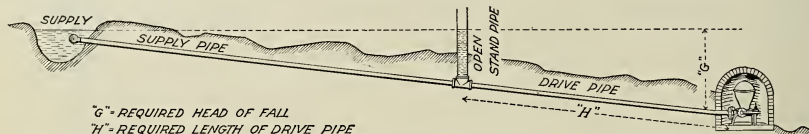
- 1st. Quantity of water, in gallons per minute available for supply.
- 2nd. Quantity of water, in gallons, required at discharge in 24 hours.
- 3rd. Vertical Fall in feet, from supply to proposed location of Ram ("A").
- 4th. Distance from supply to Ram ("B").
- 5th. Vertical Distance from Ram to point of discharge ("C").
- 6th. Required length of discharge pipe from Ram ("D").

By referring to the table on the next page the proper size of Ram can be determined, or if peculiar conditions are encountered write us full particulars with data as mentioned above.

Batteries of Rams. We have frequent inquiries for Rams of greater capacity than we build and to meet this demand offer a combination or battery of any number of Rams playing into a single discharge pipe. These combinations offer certain advantages over large single Rams; for, as each Ram in the battery receives its water through a separate drive pipe, the strain is not so great on pipe or Ram as if but one large Ram were used, and in the event of an accident to any of the Rams the supply is not suspended for each Ram acts independently of the other.

Goulds Improved Hydraulic Rams

Drive Pipes for each size of Ram must be the size given in table and of length proportioned to the discharge head. Excessive lengths cause friction and loss of power. Where it is impossible to obtain sufficient fall within the required length of pipe, the water may be conveyed any distance and an open standpipe or barrel placed in the pipe line at required distance from Ram as shown in following sketch.



In some places it may be more convenient to sink the Ram in a pit, to secure the desired fall, and convey the waste water through a drain pipe to a point where it will flow away.

Directions for Placing Rams and Pipes. The Ram should always be securely fastened on timbers or on masonry foundation and not left dependent merely upon pipe connections. The Drive Pipe must be air tight and should be laid on a straight incline with strainer on upper end, always below water level. Do not use smaller discharge pipe than given in our table, and when length is great it is advisable to increase size to prevent friction. Turns or bends in either Drive or Discharge Pipe should be avoided if possible and when it is necessary to make a turn, bend the pipe in preference to using elbows. Where it is necessary to use elbows in the Discharge Pipe, have them as large as may be to overcome friction.

A drain should be provided to carry off the waste water and the Ram should be suitably housed to prevent freezing in the cold weather.

We furnish a snifting valve in the bottom of each Ram to keep the air chamber filled with air. This should be kept free from rubbish.

Water Raised and Wasted. We show, in Table below, the head of fall and length of drive pipes for various discharge heads which give the highest efficiency in operation. Increased discharge head, excessive length of discharge pipe or turns and elbows will diminish the amount of water delivered at discharge.

Table of Proportionate Head of Fall Giving Highest Efficiency in Operation of Hydraulic Rams.

To deliver Water to Height of	Place Ram under	Conducted through	*Any size Ram may be operated under these conditions and will afford the following approximate delivery:
20 Feet above Ram	3 Feet Head of Fall	30 Feet of Drive Pipe	No. 2 require 2 to 3 gals. per min. and del. 10 to 15 gals. per hour
30 " " " "	4 " " " "	30 " " " "	3 " " 2 to 4 " " " " 10 to 20 " "
40 " " " "	5 " " " "	40 " " " "	4 " " 3 to 7 " " " " 15 to 35 " "
50 " " " "	7 " " " "	50 " " " "	5 " " 6 to 12 " " " " 30 to 60 " "
60 " " " "	7 " " " "	60 " " " "	6 " " 11 to 20 " " " " 65 to 100 " "
80 " " " "	10 " " " "	80 " " " "	6 " " 18 to 35 " " " " 90 to 175 " "
100 " " " "	11 " " " "	100 " " " "	7 " " 30 to 60 " " " " 150 to 300 " "
120 " " " "	17 " " " "	125 " " " "	

* It is assumed that the smaller Rams will not be selected for extreme high lift, as the friction loss of water in a small drive and discharge pipe renders their use impracticable.

Where water supply will permit, always select Ram of ample size for requirements.

Goulds "Thresher" Double-Acting Force Pump

For Filling Thresher Tanks and General Use

Fig. 1145 is perhaps better than any other Pump adapted to the requirements of Threshermen. Easy of operation and of great capacity, it saves much time and labor in filling tank wagons. Being a Force Pump, it is used to fill the boiler when cold. Its construction is most simple and all parts are easily removable. Caps over discharge valves are so constructed that they can be unscrewed by any stick or rod. Valves are all metal, leather-faced. Solid piston is packed with double crimped leathers. Piston rod of polished steel works through Brass stuffing-box. Water ways are large and direct. Capacity of Pump is one to two barrels a minute, depending upon rapidity of operation. Aside from service suggested above, it is much used by contractors, etc. With each Pump is included Strainer, Hose Coupling and one pair Suction Hose Bands.



Fig. 1145. Size, Price, Etc.

Fig. 1145	Dia. Cyl.	Stroke	Capacity per Rev.	†Suction	†Discharge	*Lift and Force	Cipher	Price
Pump with Strainer, Hose Couplings and Clamps.....	5 in.	5 in.	.85 gal.	2 in. hose	1 in. hose	50 ft.	Gushab	\$18.00
Outfit A.....	Fig. 1145, "Thresher" Tank Pump, with 15 feet 2-inch spiral wire suction hose, 1½ feet 1-inch 3-ply discharge hose, couplings, suction basket and nozzle, all complete.....						Gushik	40.00
Outfit B.....	Fig. 1145, "Thresher" Tank Pump, with 20 feet 2-inch spiral wire suction hose, 1½ feet 1-inch 3-ply discharge hose, couplings, suction basket and nozzle, all complete.....						Gushod	45.00
Outfit C.....	Fig. 1145, "Thresher" Tank Pump, with 25 feet 2-inch spiral wire suction hose, 1½ feet 1-inch 3-ply discharge hose, couplings, suction basket and nozzle, all complete.....						Gushum	50.00
Outfit D.....	Fig. 1145, "Thresher" Tank Pump, with 25 feet 2-inch spiral wire suction hose, 25 feet 1-inch 3-ply discharge hose, couplings, suction basket and nozzle, all complete.....						Gushva	54.00

* Total lift and force from supply to point of delivery. Pump not more than 25 feet above water.

† When specially ordered we can fit suction for 2-inch pipe and discharge for 1½-inch iron pipe, without extra charge.

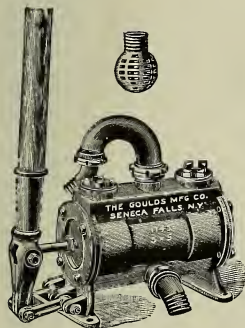


Fig. 1145

Goulds "Challenge" Double-Acting Force Pumps

With Brass Valves

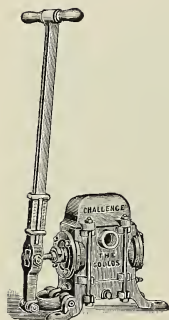


Fig. 470

Fig. 470 represents our "Challenge" Double-Acting Force Pump of great compactness and power, for use on shipboard, wharves, around factories, mills, warehouses, etc., and in residences for tank pumping. Piston rods are brass-cased, valves and valve seats of brass, cylinders either brass-lined or brass, therefore working parts are non-corrosive. On ships "Challenge" Pump performs the three-fold purpose of filling boilers when cold, washing down decks, and satisfy government inspection as to fire protection.

In mines these Pumps are almost invaluable, as they are unaffected by mine water and will force to great elevation.

Fig. 562 represents our "Challenge" Double-Acting Force Pump, described above, in a larger form, and arranged with double levers. This Pump has only one stuffing-box, so that it is less liable to leak than with two, and thus arranged can be operated with much less friction and labor. We regularly fit iron pipe. Fitted for hose to order. Pumps furnished with fibrous or metallic-packed pistons to order.

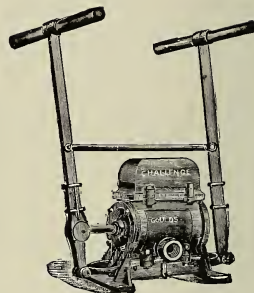


Fig. 562

Fig. 470. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Rev.	Suction	Discharge	*Lift and Force	BRASS-LINED CYL.		BRASS CYLINDER		†BRASS	
							Cipher	Price	Cipher	Price	Cipher	Price
2	2½ in.	4½ in.	.19 gal.	1¼ in.	1 in.	150 ft.	Grande	\$27.00	Rawems	\$55.00	Grantee	\$75.00
4	3 "	4½ "	.28 "	1¼ "	1 "	150 "	Grapery	28.00	Rawenb	55.00	Gratad	75.00
8	4 "	4½ "	.49 "	1½ "	1¼ "	100 "	Grab	30.00	Raweol	60.00	Loned	90.00
12	5 "	5 "	.85 "	2 "	1½ "	100 "	Grace	40.00	Rawepa	90.00	Longsa	150.00
16	6 "	5 "	1.22 "	2½ "	2 "	100 "	Varcibj	50.00	Rawfat	120.00	Vareick	185.00

Fig. 562. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Rev.	Suction	Discharge	*Lift and Force	BRASS-LINED CYL.		BRASS CYLINDER		†BRASS	
							Cipher	Price	Cipher	Price	Cipher	Price
8	4 in.	4½ in.	.49 gal.	1½ in.	1¼ in.	125 ft.	Varcidz	\$35.00	Rawejx	\$65.00	Varcien	\$100.00
12	5 "	5 "	.85 "	2 "	1½ "	125 "	Leader	45.00	Rawekl	95.00	Looky	155.00
16	6 "	5 "	1.22 "	2½ "	2 "	125 "	Leaflet	55.00	Rawell	125.00	Looma	195.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

† Brass Pumps are made entirely of brass, except levers, links and bol's.

“Monitor” D.-A. Suction and Force Pump Combined

With Brass-Lined Cylinder and Metal Valves

The cut exhibits our Double-Acting “Monitor” Suction Pump, for elevating large quantities of water from the holds of vessels, or from wells, cisterns, reservoirs, etc. It is essentially a Brass Pump, as the cylinder is lined with that metal, while the piston, piston rod, valves and their seats are made of the best composition metal. By the addition of a very few and inexpensive appliances, this Pump can be converted into a very powerful engine, with a capacity of forcing a good-sized stream of water a long distance, thus combining in one machine, and at a little more cost, a Lifting and Force Pump when required. On shipboard this Pump can be set as Bilge Pumps usually are, with the iron suction pipe extending into the hold, and by very simple changes a Force Pump can be had for extinguishing fires, washing decks, etc.

Under the air chamber, which is easily detached, lie the upper valves, while by unscrewing the four nuts that secure the bed plate to the cylinder, the cylinder can be raised, and the lower valves are exposed. The position of the Pump or the pipes have, therefore, in no way to be disturbed should the valves become clogged and require examination. We can most heartily commend this Pump to our friends. Fitted for hose, unless otherwise ordered, but we can fit for iron pipe if so desired. Pumps furnished with fibrous or metallic packed piston to order.

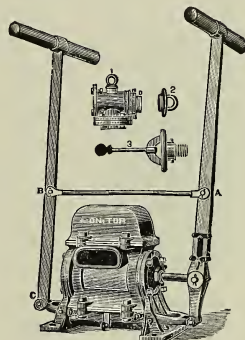


Fig. 581

Fig. 581. Suction and Bilge Pump. Size, Price, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Revolution	Suction	Cipher	Brass-Lined
16	6 in.	5 in.	1.22 gal.	2½ in. hose	Melt	\$55.00

Fig. 582. Combined Force Pump. Size, Price, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Revolution	Suction	Discharge	*Lift and Force	Cipher	Brass-Lined
16	6 in.	5 in.	1.22 gal.	2½ in. hose	2 in. hose	125 ft.	Mend	\$60.00

* Total lift and force from supply to point of delivery. Pump not more than 25 feet from water.

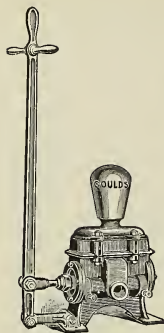


Fig. 1334

Goulds "New Alert" Double-Acting Force Pump

Fig. 1334, "New Alert," is an improved type of our popular "Alert" Pumps. The fulcrum of our new Pump is placed at the base, giving more powerful leverage. The air chamber is larger, insuring even flow from discharge. Water ways are large and direct. The valves are grouped in box above Cylinder and are easily accessible by loosening bolts at the side of valve box.

Pumps are ordinarily furnished with leather valves, but we can furnish with brass valves and valve seats at extra list: No. 2, \$1.75; No. 4, \$2.25; No. 8, \$3.00; No. 12, \$5.00.

"New Alert" Pumps are regularly fitted for iron pipe, as listed below. We can furnish them, however, fitted for lead pipe, or for hose at extra list: No. 2 and 4, \$3.00; No. 8, \$3.50; No. 12, \$6.30.

Fig. 1334. Sizes, Prices, Etc.

No	Diameter Cylinder	Stroke	Capacity per Revolution	Suction	Discharge	*Lift and Force	IRON		BRASS-LINED	
							Cipher	Price	Cipher	Price
2	2½ in.	5 in.	.21 gal.	1¼ in. pipe	1 in. pipe	75 ft.	Visake	\$16.00	Visang	\$18.50
4	3 "	5 "	.31 "	1¼ "	1 "	75 "	Visalt	18.00	Visaos	21.00
8	4 "	5 "	.54 "	1½ "	1¼ "	50 "	Visamy	24.00	Visapt	28.00
12	5 "	5 "	.85 "	2 "	2 "	50 "	Paical	30.00	Panifo	35.00

*Total lift and force from supply to point of delivery. Pump not more than 25 feet above water.

Goulds Vertical Two-Cylinder Force Pump

With Brass Plungers, Glands, Valves and Valve Seats

Fig. 1402 has two vertical brass plungers operated by a single lever. It is the easiest working Pump of its capacity built. One man can maintain 125 lbs. pressure and pump large quantity of liquid. Plunger can be repacked without being removed or disconnected. Pump has brass Glands, brass Valves and Valve Seats, all easily accessible. Malleable lever is detachable and may be operated in a vertical or horizontal position as desired. Discharge opening at front with suction at back of Pump; regularly fitted for iron pipe, but can be fitted for hose to order.

Drip plugs provide for emptying cylinders of water.

Pump occupies very little floor space.

Iron wrench free with each Pump.

We list below two sizes only, but will add other sizes as occasion requires.

Fig. 1402. Sizes, Prices, Etc.

No	Diameter Plungers	Stroke	Capacity per Revolution	Suction	Discharge	*Lift and Force	Cipher	Price
0	2 in.	4 in.	.11 gal.	1¼ in. pipe	1 in. pipe	200 ft.	Veipum	\$25.00
2	2½ "	4 "	.17 "	1¼ "	1¼ "	200 "	Veleft	30.00

*Total lift and force from supply to point of delivery. Pump not more than 25 feet above water.

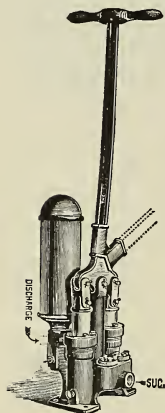


Fig. 1402

Goulds Brass Two-Cylinder Force Pump

With Detachable Iron Lever

Fig. 773 represents our Two-Cylinder Force Pump with brass cylinders, check valve, rods and stuffing boxes, making it practically a brass Pump. This Pump has two vertical working pistons actuated by one lever, having the full effect of a double-acting Pump.

The suction and discharge are fitted for lead or iron pipe, as ordered.

Fig. 773. Sizes, Prices, Etc.

No.	Diameter Cylinders	Stroke	Capacity per Rev.	Suction	Discharge	*Lift and Force	Cipher	Brass
0	2 in.	4 in.	.11 gal.	1 1/4 in. pipe	1 in. pipe	150 ft.	Vendor	\$30.00
2	2 1/2 "	4 "	.17 "	1 1/4 "	1 1/4 "	125 "	Vendue	35.00
4	3 "	4 "	.24 "	1 1/2 "	1 1/4 "	100 "	Veneer	45.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

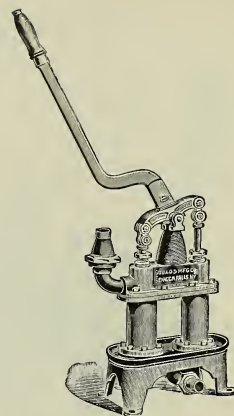


Fig. 773

Goulds "Challenge" Double-Acting Force Pump

With Pitman for Machine Power

Fig. 604 represents our "Challenge" Double-Acting Force Pump, mounted on plank, with pitman, guide and guide rod for attaching to face plate and crank pin by means of connecting rod. May be operated by Figs. 597 or 597 1/2, Horse Powers (page 102), or other machine power. They can be run up to a maximum of 40 to 50 revolutions per minute, though 30 would be better. Both suction and discharge fitted for gas pipe, unless otherwise ordered.

Pump furnished with fibrous or metallic packed piston to order.

Fig. 604. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Rev.	Suction	Discharge	BRASS LINED		BRASS CYL.	
						Cipher	Price	Cipher	Price
2	2 1/2 in.	4 1/2 in.	.19 gal.	1 1/4 in. pipe	1 in. pipe	Molec	\$30.00	Repert	\$58.00
4	3 "	4 1/2 "	.28 "	1 1/4 "	"	Molty	31.00	Repesu	58.00
8	4 "	4 1/2 "	.49 "	1 1/2 "	1 1/4 "	Monkish	33.00	Rideck	63.00
12	5 "	5 "	.85 "	2 "	1 1/2 "	Moody	45.00	Rideds	95.00
16	6 "	5 "	1.22 "	2 1/2 "	2 "	Moon	55.00	Rideer	125.00

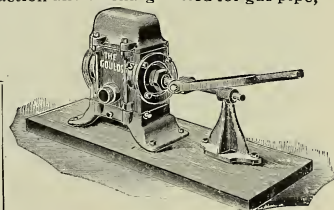


Fig. 604

"Rocker" Duplex Double-Acting Force Pumps

With Brackets and Detachable Standards

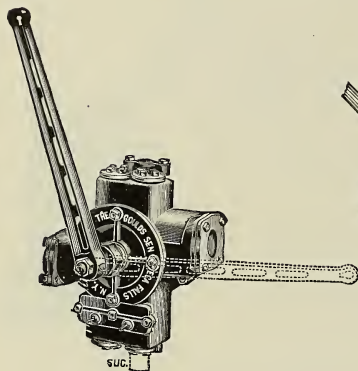
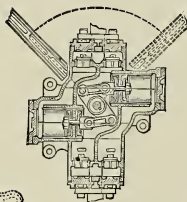


Fig. 1213



Sectional View

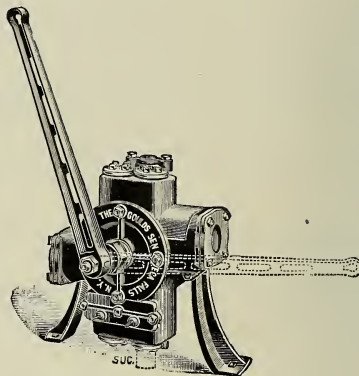


Fig. 1214

Figs. 1213 and 1214, "Rocker" Force Pumps, have a general application for all purposes where a Hand Force Pump may be employed. They are provided with two double-acting pistons, each fitted with double cup leathers, working in brass-lined cylinders. The suction and discharge valves and valve seats are brass, and are accessible without disturbing pipe connections. Lever is long, of malleable iron and may be operated in a vertical or horizontal position. The working parts of the Pump are so nicely arranged that the slightest movement of the lever causes the water to flow at once. Suction and discharge regularly fitted for iron pipe. Fitted for hose or lead pipe to order at extra price. For pumping wines, acids or hot water, Pumps should be specially fitted. This we do to order. Fig. 1213 has Brackets for attaching to wall or plank. Fig. 1214 has Brackets, also detachable legs or standards.

A check or foot valve should always be used in connection with above Pumps.

Figs. 1213 and 1214. Sizes, Prices, Etc.

No.	Diameter Cylinder	Capacity per Revolution	Approximate Capacity per Minute	Suction and Discharge	*Lift and Force	Fig. 1213		Fig. 1214	
						Cipher	Brass-Lined Cylinder	Cipher	Brass-Lined Cylinder
2	2½ in.	.21 gals.	10 to 16 gals.	1 in. pipe	175 ft.	Metobe	\$25.00	Moawed	\$27.25
4	3 "	.33 "	18 to 24 "	1¼ "	175 "	Metock	28.00	Moawig	30.50
6	3½ "	.60 "	33 to 40 "	1½ "	150 "	Metuma	31.00	Moawon	33.75
8	4 "	.82 "	40 to 48 "	2 "	150 "	Metund	37.00	Moawub	40.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

“Rocker” Duplex Double-Acting Force Pumps

Mounted on Standards, With or Without Air Chamber

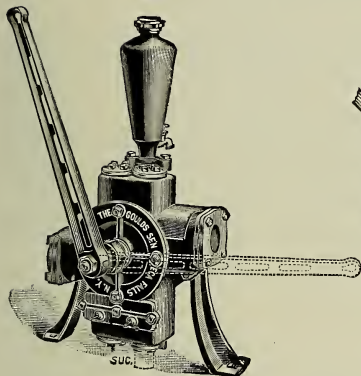
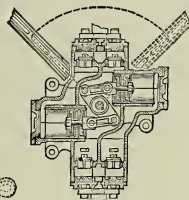


Fig. 1215



Sectional View

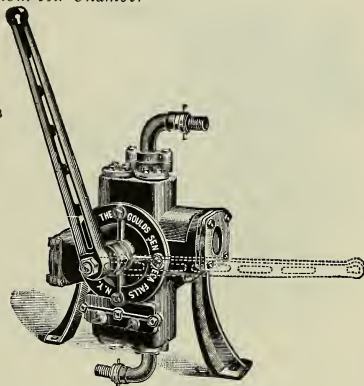


Fig. 1219

General description of “Rocker” Force Pumps and their construction is given on preceding page. Pumps with legs or standards also have brackets by which they can be attached to wall or plank.

Fig. 1215 has air chamber and cock spout. So arranged, these Pumps provide for water being drawn at spout or forced above to tank. Suction and top of air chamber regularly fitted for iron pipe. Fitted for lead pipe or hose to order.

Fig. 1219 is same as Fig. 1214, on preceding page, with addition of suction and discharge elbows and iron couplings. Iron pipe of same size can be attached to end of elbow by removing hose coupling. A check or foot valve should always be used in connection with above pumps.

Fig. 1215. Sizes, Prices, Etc.

No.	Diameter Cylinder	Capacity per Revolution	Approximate Capacity per Minute	Suction	DISCHARGES		*Lift and Force	Cipher	Brass Lined Cylinder
					Top of Air Chamber	Nose of Cock			
2	2½ in.	.21 gals.	10 to 16 gals.	1 in. pipe.	1 in. pipe.	1 in. hose	175 ft.	Mobuso	\$28.50
4	3 " "	.33 " "	18 to 24 " "	1½ " "	1½ " "	1 " "	175 " "	Mobvab	32.00
6	3½ " "	.60 " "	33 to 40 " "	1½ " "	1½ " "	1 " "	150 " "	Mobvit	35.00
8	4 " "	.82 " "	40 to 48 " "	2 " "	2 " "	1 " "	150 " "	Mobvox	42.00

Fig. 1219. Sizes, Prices, Etc.

No.	Diameter Cylinder	Capacity per Revolution	Approximate Capacity per Minute	Suction and Discharge	*Lift and Force	Cipher	Brass-Lined Cylinder
2	2½ in.	.21 gals.	10 to 16 gals.	1 in. hose	175 ft.	Moonfat	\$31.00
4	3 " "	.33 " "	18 to 24 " "	1½ " "	175 " "	Moonfem	35.00
6	3½ " "	.60 " "	33 to 40 " "	1½ " "	150 " "	Moongal	39.00
8	4 " "	.82 " "	40 to 48 " "	2 " "	150 " "	Moonget	45.00

*Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

Goulds "New Deluge" Suction Pump

With Brass-Lined Cylinder and Removable Valves

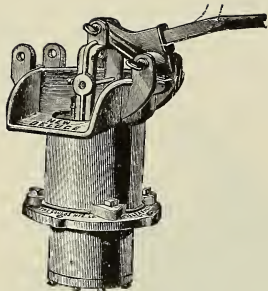


Fig. 829.

Fig. 829 represents our improved "New Deluge" Pump, which is designed for shallow or small vessels of not more than 15 to 20 feet depth of hold; for contractors who wish to pump large quantities of water from excavations, etc., for irrigation or any other purpose where a compact and capacious Pump is desired.

The cylinder is lined with brass, the valves rubber-faced and the lever socket made at such an angle that the bent wrought-iron lever when put in one side up is right for ordinary pumping, and by simply changing it to the other side up it becomes a vertical lever. This lever may also be worked from three different points, as shown by lugs in our cut.

The Pump has large valves accessible and removable by hand from above, while to the bottom of the base is bolted a flange which may be cut for any size pipe ordered, or changed for other sizes if desired.

Fig. 829. Sizes, Prices, Etc.

Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Lift	Cipher	Brass Lined
6 in.	4 in.	.49 gal.	2½ in. pipe	20 ft.	Wakend	\$23.00
8½ "	6 "	1.47 "	3 "	20 "	Waking	30.00

Can furnish 8½-inch by 6-inch Iron (not brass lined) Pump fitted 4-inch pipe, with special foot valve for pumping asphaltum, at \$50.00 list.

Goulds "New Deluge" Suction Pump

With Brass-Lined Cylinder and Removable Valves

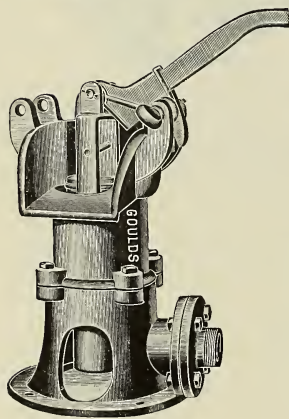


Fig. 836

Fig. 836 represents our "New Deluge" Pump described above, arranged with elevated base to be used above deck or foundation where it is desired to use hose suction or more convenient to make pipe connections in this manner. The suction flange is fitted for sizes of wrought-iron pipe given below, unless otherwise ordered, or can be cut hose gauge to take our regular suction half hose coupling, which is furnished at extra price.

Fig. 836. Sizes, Prices, Etc.

Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Lift	Cipher	Brass Lined
6 in.	4 in.	.49 gal.	2½ in. pipe	20 ft.	Weaken	\$24.00
8½ "	6 "	1.47 "	3 "	20 "	Weakees	31.00

Goulds New Diaphragm Suction Pump

With Bottom Suction for Pipe

Fig. 1222 represents the most approved design of Diaphragm Pump. Lever is reversible and can be used at back of the Pump, or on either side. Lower valve is of metal, rubber faced, easy of access and readily removable. Waterways are large and easy. Diaphragm is made of *best quality* rubber. Pump combines simplicity with strength. In these Pumps the diaphragm takes the place of the plunger. They are particularly adapted for pumping water containing mud, sand, gravel, sewage, coal, chips or any semi-fluid matter. Pumps with bottom suction are used in places where they can remain stationary, as on vessels, barges, dredges, wharves, etc. We regularly fit as in our table below.

Fig. 1222. Sizes, Prices, Etc.

No.	Suction	Approximate Capacity	Cipher	Price
2	2½ in. iron pipe	1800 gallons per hour	Tokeot	\$17.50
3	3 " " "	3500 " " "	Todeka	20.00
4	4 " " "	6000 " " "	Todgac	35.00

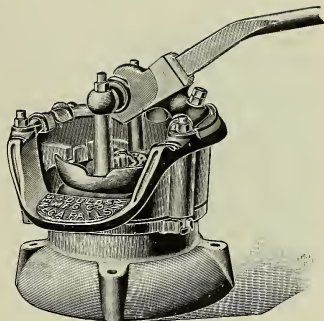


Fig. 1222

Goulds New Diaphragm Suction Pump

With Side Suction for Hose or Pipe

Fig. 1223, New Diaphragm Pump, is similar in general construction to Fig. 1222, described above, differing only in that it has side suction, and therefore a different kind of suction valve. This valve is brass, rubber-faced, resting upon an inclined seat, thus affording smallest obstruction to passage of any matter. Unless otherwise ordered, suction is cut 3-inch pipe thread, which is also the thread now generally used on hose couplings of that size. We can cut to any special hose gauge, if ordered. Suction hose and couplings furnished at market prices. Special brass hose couplings, suction hose and strainers furnished at market prices when ordered.

Fig. 1223. Sizes, Prices, Etc.

No.	Suction	Approximate Capacity	Cipher	Price
2	2½ in. hose or iron pipe	1800 gallons per hour	Tokepy	\$21.50
3	3 " " "	3500 " " "	Todels	24.00
4	4 " " "	6000 " " "	Tohig	45.00

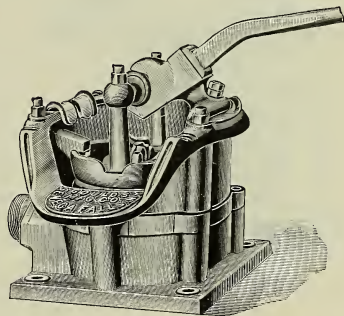


Fig. 1223

Goulds Odorless Diaphragm Force Pump

With Large Air Chamber and Reversible Levers

Fig. 1161 illustrates our improved Odorless Diaphragm Force Pump, specially designed for pumping out sewers, cesspools, vaults, etc., or moving any semi-liquid matter which an ordinary Pump could not successfully handle. In this Pump a rubber diaphragm with special valve acts as plunger. Bronze valve seat and cover incase the inclined rubber-faced suction valve, offering least obstruction to passage of matter. The levers are wrought-iron and reversible. The stroke is short and operates easily. Pump has convenient hand-hole for getting at interior without removing air-chamber. Suction and discharge regularly fitted for iron-pipe, but can cut to any special hose gauge. We can furnish hose and couplings to order.

Fig. 1161. Size, Price, Etc.

Diameter Diaphragm	Stroke	Capacity per Stroke	Suction	Discharge	Cipher	Price
13 in.	2½ in.	1.47 gals.	3 in. pipe	3 in. pipe	Zutad	\$45.00

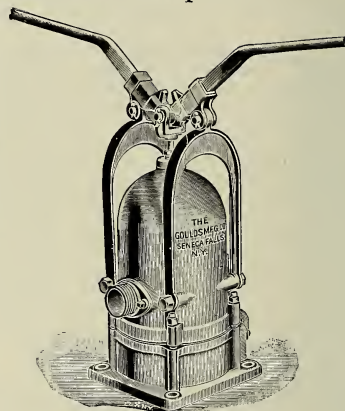


Fig. 1161

Two-Cylinder Suction Pump

With Folding Levers

The cut represents our new Two-Cylinder Suction or Contractors' Pump. This Pump has large capacity, and for pumping out pits, mines, quarries, etc., will render most excellent service. These pumps can be mounted on a truck with wheels and drag handle, when so ordered, at a small additional expense. The levers can be folded into a small space, as shown in illustration. The suction is always fitted for iron pipe unless ordered to the contrary, although can be arranged for suction hose when so specified.

Fig. 1162. Size, Price, Etc.

Diameter Cylinders	Stroke	Capacity per Stroke	Suction	Cipher	Price
12 in.	8 in.	7.83 gals.	6 in. pipe	Tickist	\$140.00

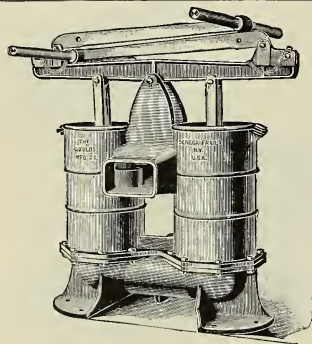


Fig. 1162

Goulds Ship's Main and Bilge Pump

With Wood Levers

The cut represents our improved Ship's Main and Bilge Pump, for use upon shipboard, in mines and upon plantations for irrigation. It has a reversible top, heavy strong bed-plate, poppet valves of new design; the suction pipe is attached to the vacuum chamber above the valves, so that they are always submerged; the plungers are always made of brass, with large waterways. We also furnish two and three-way cocks, at extra list price. See under Fig. 579.

Fig. 578. Sizes, Prices, Etc.

Diameter Cylinders	Stroke	Capacity per Rev.	Suction	Lift	IRON CYLINDERS		BRASS-LINED CYLINDERS	
					Cipher	Price	Cipher	Price
5½ in.	6½ in.	1.34 gal.	3 in. pipe	25 ft.	Lestall	\$55.00	Lidda	\$75.00
5½ "	8 "	1.64 "	3 "	25 "	Letada	60.00	Lien	80.00
6 "	8 "	1.96 "	3 "	25 "	Levy	70.00	Maw	90.00

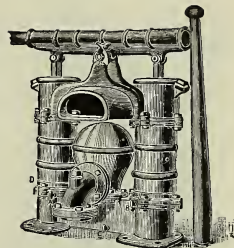


Fig. 578

Goulds Ship's Main and Bilge Pump

With Wrought-Iron Extension Levers

Fig. 579 represents our improved Ship's Main and Bilge Pump, fully described above, arranged with wrought-iron extension levers, so that a large force of men can be employed in operating it. We also furnish two and three-turn brass cocks with elbows, where a suction pipe is wanted for each side of the keelson.

Fig. 579. Sizes, Prices, Etc

Diameter Cylinders	Stroke	Capacity per Rev.	Suction	Lift	IRON CYLINDERS		BRASS-LINED CYLINDERS	
					Cipher	Price	Cipher	Price
5½ in.	6½ in.	1.34 gal.	3 in. pipe	25 ft.	Maya	\$60.00	Meada	\$80.00
5½ "	8 "	1.64 "	3 "	25 "	Mazed	65.00	Meal	85.00
6 "	8 "	1.96 "	3 "	25 "	Mazy	75.00	Meaned	95.00
8 "	8 "	3.48 "	4 "	25 "	Mazera	115.00	Meant	140.00

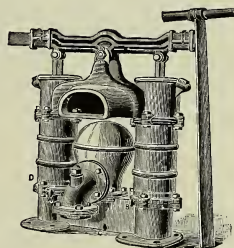


Fig. 579

Brass 2-way cock, with 2 elbows for 2 suction pipes..... \$18.00 net
 Brass 3-way cock, with 2 elbows for 3 suction pipes..... 20.00 net

Goulds Two-Cylinder Force Pumps

With Wood or Wrought Levers

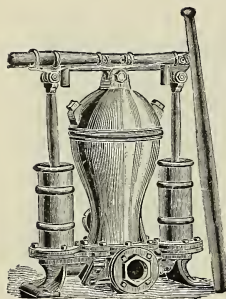


Fig. 518

Fig. 518 is a powerful Two-Cylinder Force Pump, which is double-acting in operation, simple and compact in build, all parts being readily accessible, and can be operated by wood levers or power, as desired. The suction is always fitted for wrought-iron pipe, and the discharge for hose, unless otherwise ordered; can fit both ends for wrought-iron pipe, or both ends for hose, if ordered.

Fig. 520 represents our Two-Cylinder Suction and Force Pump described above, arranged with extension levers. When these levers are put in place, they afford room for many men to work, and render this pump a most powerful engine for forcing water on fires, or supplying it for many uses about factories, ware-houses, wharves, etc.

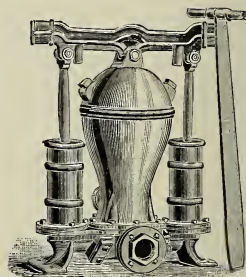


Fig. 520

Fig. 518. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Rev.	Suction	Discharge	*Lift and Force	IRON CYLINDERS		BRASS-LINED CYL.		BRASS CYLINDERS	
							Cipher	Price	Cipher	Price	Cipher	Price
4	3 in.	6½ in.	.40 gal.	1½ in. pipe	1½ in. hose	100 ft.	Hoax	\$35.00	Holt	\$42.00	Hoot	\$55.00
6	3½ "	6½ "	.54 "	2 "	1½ "	75 "	Hock	40.00	Home	50.00	Hops	63.00
8	4 "	8 "	.87 "	2½ "	2 "	75 "	Hod	45.00	Honel	55.00	Hopel	75.00
10	4½ "	8 "	1.10 "	2½ "	2 "	75 "	Hoe	52.50	Hood	67.50	Hose	87.50
12	5 "	8 "	1.36 "	2½ "	2 "	75 "	Hold	60.00	Hoofit	75.00	Hostal	100.00
16	6 "	8 "	1.96 "	4 "	2½ "	50 "	Hole	85.00	Hoopla	105.00	Hour	135.00

Fig. 520. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Rev.	Suction	Discharge	*Lift and Force	IRON CYLINDERS		BRASS-LINED CYL.		BRASS CYLINDERS	
							Cipher	Price	Cipher	Price	Cipher	Price
4	3 in.	6½ in.	.40 gal.	1½ in. pipe	1½ in. hose	100 ft.	Visitab	\$45.00	Visne	\$52.00	Vitalize	\$65.00
6	3½ "	6½ "	.54 "	2 "	1½ "	75 "	Visitan	50.00	Visor	60.00	Vitally	73.00
8	4 "	8 "	.87 "	2½ "	2 "	75 "	Visited	55.00	Vista	65.00	Vitals	85.00
10	4½ "	8 "	1.10 "	2½ "	2 "	75 "	Visitfy	62.50	Visual	77.50	Vitatie	97.50
12	5 "	8 "	1.36 "	2½ "	2 "	75 "	Visitor	70.00	Vital	85.00	Vitious	110.00
16	6 "	7 "	1.96 "	4 "	2½ "	50 "	Visive	95.00	Vitalit	115.00	Vitreos	145.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

Goulds Two-Cylinder Force Pumps

With Wood Levers or Folding Brakes

Fig. 283 exhibits a new Two-Cylinder Force Pump, with wood levers, etc., and may be worked by hand or machinery, while Fig. 284 is the same Pump with folding brakes, which are large enough to admit four or six men working upon them. Pumps are made with brass-cased piston rods, valves and stuffing boxes.

The valve at the bottom of the Cylinder is double and improved in its construction, and can be readily tripped or opened by pressing down the lever until it strikes the top of the air chamber.

The Pump is simple in its construction, not liable to get out of order, and by the directness of its action and consequent freedom from friction is a most efficient and powerful Pump.

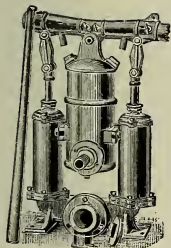


Fig. 283

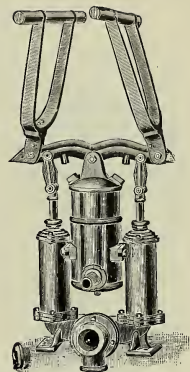


Fig. 284

Fig. 283. Sizes, Prices, Etc.

No.	Diameter Cylinders	Stroke	Capacity per Revolution	Suction	Discharge	*Lift and Force	IRON CYLINDERS		BRASS-LINED CYL.		BRASS CYLINDERS	
							Cipher	Price	Cipher	Price	Cipher	Price
2	2½ in.	6 in.	.26 gal.	2 in. pipe	1¼ in. hose	125 ft.	Dazed	\$38.00	Polmegs	\$45.00	Debar	\$58.00
4	3 "	6 "	.37 "	2 "	1¼ "	125 "	Dazzle	40.00	Polmehe	47.00	Debase	60.00
6	3½ "	6 "	.50 "	2½ "	1½ "	100 "	Deafa	47.00	Polmeja	57.00	Debit	70.00
8	4 "	6 "	.65 "	2½ "	1½ "	100 "	Deale	55.00	Polmeks	65.00	Debta	85.00
10	4½ "	6 "	.83 "	3 "	2 "	100 "	Deam	65.00	Polmelb	80.00	Debut	100.00
12	5 "	8 "	1.36 "	4 "	3 "	75 "	Balse	75.00	Polmem	90.00	Benec	115.00
16	6 "	8 "	1.96 "	4 "	3 "	75 "	Dear	100.00	Polmeno	120.00	Decay	150.00

Fig. 284. Sizes, Prices, Etc.

No.	Diameter Cylinders	Stroke	Capacity per Revolution	Suction	Discharge	*Lift and Force	IRON CYLINDERS		BRASS-LINED CYL.		BRASS CYLINDERS	
							Cipher	Price	Cipher	Price	Cipher	Price
2	2½ in.	6 in.	.26 gal.	2 in. pipe	1¼ in. hose	125 ft.	Deck	\$53.00	Polmeop	\$60.00	Deep	\$73.00
4	3 "	6 "	.37 "	2 "	1¼ "	125 "	Decker	55.00	Polmequ	62.00	Deeply	75.00
6	3½ "	6 "	.50 "	2½ "	1½ "	100 "	Decoyed	62.00	Polmics	72.00	Deera	85.00
8	4 "	6 "	.65 "	2½ "	1½ "	100 "	Decry	70.00	Polmid	80.00	Defer	100.00
10	4½ "	6 "	.83 "	3 "	2 "	100 "	Deedo	80.00	Polmifu	95.00	Defix	115.00
12	5 "	8 "	1.36 "	4 "	3 "	75 "	Belted	90.00	Primmo	105.00	Blown	130.00
16	6 "	8 "	1.96 "	4 "	3 "	75 "	Deema	120.00	Primnu	140.00	Defly	170.00

*Total lift and force from supply to point of delivery, Pumps not more than 25 feet above water.

Goulds Hand and Power Rotary Force Pumps

Probably in no class of manufacture is the axiom, "The best is the cheapest," better exemplified than in that of Hand and Power Rotary Force Pumps.

Having been extensively engaged for the past 50 years in the manufacture and sale of these Pumps, we have profited by our experience, and feel justified, by the unsolicited testimony of our patrons and our constantly increasing sales, in saying we are to-day making the largest and best line of these goods in the market. A Rotary Pump must be made with the utmost care and accuracy, or it is worthless—and it is these points of excellence, accomplished by our skilled labor and improved machinery, that have earned the enviable reputation of the "Goulds Rotary."

These Pumps will lift water as far as any piston Pump and give a constant uniform discharge.

When wanted for pumping hot liquids it is necessary that we should be advised of it, as we put in a metallic valve in that case. Bronze Pumps should always be used in distilleries, malt houses, etc.

The whole inside working and principle of our Pumps are obvious from the illustrations given below, in which Fig. 299 represents the cams used in our smaller Hand Pumps, and Fig. 300 those in our large Power Pumps.

View of Goulds Rotary Pumps With Case Cover Removed

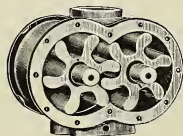


Fig. 299
Sectional View
Hand Rotary Pump

it better than any other Pump. The cams are not rough castings, "sand ground," as those in some inferior Pumps, but are carefully and accurately planed to mesh into each other and fit their case perfectly.

It is also a point worth noting that if a little good oil be put into the case of our Pumps before and after using at first, or simply pump air with this oil a few times, the cams become as hard upon the surface as fine tempered steel, and are almost unaffected by constant use afterwards.

Drip plugs are provided for draining Pumps in cold weather. To do this, turn the cams backward a single revolution to release all water.

The peculiar formation of these revolving cams or pistons was acquired after long experimenting and successful practice, and has demonstrated them to be of such a shape as to produce the very minimum of friction and wear with the greatest results.

The cases which receive these cams are engine lathe turned and bored and so perfectly true and smooth that the cams when in operation create almost a perfect vacuum and will "pick up" water quicker, for a long distance, and hold

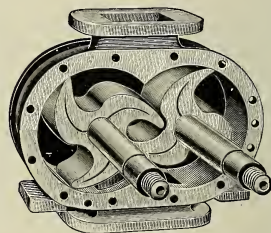


Fig. 300
Sectional View
Power Rotary Pump

Goulds Rotary Force Pumps

With Balance Wheel for Hand Power

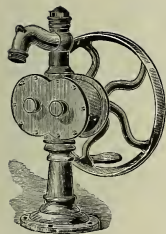


Fig. 297

Fig. 297 represents one of our celebrated Hand Rotary Force Pumps. They are adapted for every place or purpose where a Lift and Force Pump can be used, or can be moved to any place where water is within suction distance and instantly operated.

Fig. 297½ Hand Rotary Pump is made in larger sizes than Fig. 297, and has higher base and larger balance wheel. The cam shaft is long enough to put another fly-wheel on, so that four men can work if necessary. Brass plugs are provided at top and bottom of case for letting out the water in cold weather. We would advise the use of a check valve at end of suction pipe, as it keeps the pipe always filled and renders the Pump ready for use with a single revolution. Constructive view of Rotary Pump is given on preceding page. By the addition of metallic lower valve, hot liquids can be handled as well as cold. Hot liquid must always flow to the Pump, as the vapors prevent any Pump from making a vacuum.

For wine or liquor a Bronze Pump should always be used, as it is unaffected by the action of acids. *Our Rotary Pumps are known in every country of the world as the very best made, and always give satisfaction.*

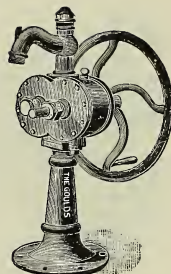


Fig. 297½

Fig. 297. Sizes, Prices, Etc.

No	Capacity per Minute 100 Revs.	Suction	DISCHARGES		Diameter Balance Wheel	*Lift and Force	IRON		BRONZE CASE AND CAMS		†BRONZE	
			End of Spout	Top of Spout			Cipher	Price	Cipher	Price	Cipher	Price
1	10 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	14½ in.	60 ft.	Ditty	\$19.00	Dizzy	\$41.00	Primnyx	\$51.00
2	13 "	1¼ "	1 "	1 "	14½ "	60 "	Dive	22.00	Dock	46.00	Primob	56.00
3	17 "	1½ "	1¼ "	1¼ "	14½ "	60 "	Divan	26.00	Dodge	51.00	Primocs	63.00

Fig. 297½. Sizes, Prices, Etc.

No	Capacity per Minute 100 Revs.	Suction	DISCHARGES		Diameter Balance Wheel	*Lift and Force	IRON		BRONZE CASE AND CAMS		†BRONZE	
			End of Spout	Top of Spout			Cipher	Price	Cipher	Price	Cipher	Price
1	10 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	20 in.	60 ft.	Doer	\$20.00	Doled	\$42.00	Primodl	\$52.00
2	13 "	1¼ "	1 "	1 "	20 "	60 "	Doff	23.00	Domel	47.00	Primof	57.00
3	17 "	1½ "	1¼ "	1¼ "	20 "	60 "	Doggel	27.00	Donad	52.00	Primoga	64.00
4	27 "	1½ "	1½ "	1½ "	20 "	60 "	Dogma	35.00	Done	65.00	Primul	87.00
4A	27 "	1½ "	1½ "	1½ "	36 "	60 "	Dogskin	39.00	Doit	69.00	Primums	91.00
5	36 "	2 "	2 "	2 "	20 "	60 "	Doing	40.00	Doom	75.00	Primve	105.00
5A	36 "	2 "	2 "	2 "	36 "	60 "	Doily	44.00	Dolce	79.00	Primvit	109.00
6	45 "	2½ "	2½ "	2½ "	36 "	60 "	Voidues	50.00	Voiture	100.00	Primvo	140.00

*Total lift and force from supply to point of delivery, Pump not more than 15 to 20 feet above water.

†"Bronze" Pumps have *all* parts coming in contact with the liquid of Bronze, including metal lower valves.

Goulds Rotary Force Pumps

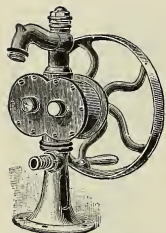


Fig. 821

Fig. 821 represents our Hand Rotary Force Pump arranged with side suction for hose or lead pipe. Unlike other Rotary Pumps, which are tapped for wrought-iron pipe, that must pass up through bottom of standard or base, this one is conveniently arranged for hose suction at side. Many reasons will suggest themselves of the practical utility and convenience of this feature, as the suction hose may be dropped in any position readily, and as readily removed to another for immediate use.

Fig. 810 represents our Rotary Force Pump with outside bearing and pulley fly-wheel for power use. This Pump may be used for any of the many services of Rotaries—for pumping hot or cold water, wines, liquors, etc., and is specially arranged for power use at a moderate expense. These Pumps are admirably adapted for use with high-speed gas, kerosene, or other engines, as the height of outside bearing admits the use of a very large pulley to compensate for speed of engine.

Always fitted for wrought-iron suction pipe.

Constructive view is shown on page 154.

By the addition of a metallic lower valve any of our Rotary Pumps will handle hot liquids. Hot liquid must always flow to the Pump. For wines, liquors or acid substances, bronze Pumps should be used.

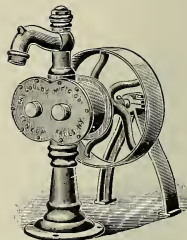


Fig. 810

Fig. 821. Sizes, Prices, Etc.

No.	Capacity per Minute 100 Revs.	Suction	DISCHARGES		Diameter Balance Wheel	*Lift and Force	IRON		BRONZE CASE AND CAMS	
			End of Spout	Top of Spout			Cipher	Price	Cipher	Price
1	10 gals.	1¼ in. hose	1 in. hose	1 in. pipe	14½ in.	60 ft.	Watest	\$20.00	Watcyf	\$42.00
2	13 "	1¼ "	1 "	1 "	14½ "	60 "	Wateta	23.00	Watfat	47.00
3	17 "	1½ "	1¼ "	1¼ "	14½ "	60 "	Wateub	27.25	Watfeg	52.25
4	27 "	1½ "	1½ "	1½ "	20 "	60 "	Watevs	36.25	Watgan	66.25
5	36 "	2 "	2 "	2 "	20 "	60 "	Watewd	41.75	Watges	76.75
6	45 "	2½ "	2½ "	2½ "	36 "	60 "	Watexr	51.75	Wathot	101.75

Fig. 810. Sizes, Prices, Etc.

No.	Capacity per Min. 100 Revs.	Suction	DISCHARGES		Pulley	*Lift and Force	IRON		BRONZE CASE AND CAMS		†BRONZE	
			End of Spout	Top of Spout			Cipher	Price	Cipher	Price	Cipher	Price
1	10 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	12 x 3 in.	60 ft.	Vaguene	\$25.00	Vahepa	\$47.00	Primwu	\$57.00
2	13 "	1¼ "	1 "	1 "	12 x 3 "	60 "	Vahab	28.00	Vaheqt	52.00	Prinap	62.00
3	17 "	1½ "	1¼ "	1¼ "	15 x 3 "	60 "	Vahela	32.00	Vaherls	57.00	Prinate	69.00
4	27 "	1½ "	1½ "	1½ "	16 x 4 "	60 "	Vahemy	45.00	Vahesm	75.00	Prineb	97.00
5	36 "	2 "	2 "	2 "	20 x 4 "	60 "	Vahenl	50.00	Vaheta	85.00	Prineco	115.00
6	45 "	2½ "	2½ "	2½ "	24 x 4 "	60 "	Vaheop	60.00	Vaheub	110.00	Prineds	150.00

*Total lift and force from supply to point of delivery, Pump not more than 20 feet above water.

†"Bronze" Pumps have all parts coming in contact with the liquid of bronze.

Goulds Rotary Force Pumps

For Hand Pumping

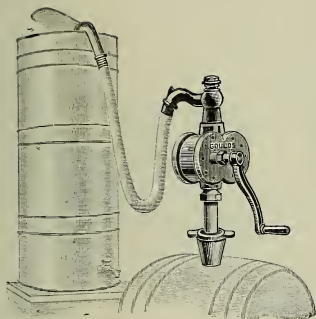


Fig. 464

Fig. 464 shows our Hand Rotary Pump, arranged for holding the suction pipe of the Pump rigid in the bung hole of the barrel. The holder can be used in barrels having any size of bung, from $1\frac{1}{2}$ to 4 inches in diameter. With this apparatus, fluids can be pumped from a barrel or hoghead, and forced into a receptacle at a distance.

The prices given below include suction pipe (three feet long), hose coupling, hook and holder.

Fig. 665 shows Hand Rotary Force Pump, arranged on a flat base or plate, 7×10 inches, with a cast-iron hub projecting four or five inches.

We fit discharge for hose coupling, but can fit for gas pipe if so advised. Constructive view is given on page 154. For handling acid substances, Bronze Pumps should be used.

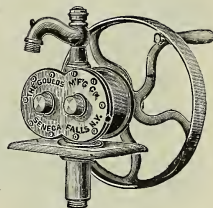


Fig. 665

Fig. 464. Sizes, Prices, Etc.

No.	Capacity per Minute 100 Revs.	Suction	DISCHARGES		IRON.		BRONZE CASE AND CAMS		†BRONZE	
			End of Spout	Top of Spout	Cipher	Price	Cipher	Price	Cipher	Price
1	10 gals.	1 in. pipe	1 in. hose	1 in. pipe	Girth	\$17.00	Glade	\$39.00	Prineet	\$49.00
2	13 "	1 "	1 "	1 "	Gist	20.00	Glared	44.00	Prinfu	54.00
3	17 "	$1\frac{1}{4}$ "	$1\frac{1}{4}$ "	$1\frac{1}{4}$ "	Give	24.00	Glass	49.00	Pringas	61.00

Fig. 665. Sizes, Prices, Etc.

No.	Capacity per Minute 100 Revs.	Suction	DISCHARGES		Diameter Balance Wheel	IRON		BRONZE CASE AND CAMS		†BRONZE	
			End of Spout	Top of Spout		Cipher	Price	Cipher	Price	Cipher	Price
1	10 gals.	$1\frac{1}{4}$ in. pipe	1 in. hose	1 in. pipe	$1\frac{1}{2}$ in.	Louck	\$19.50	Lung	\$41.50	Pringet	\$51.00
2	13 "	$1\frac{1}{4}$ "	1 "	1 "	$1\frac{1}{2}$ "	Luff	22.50	Lured	46.50	Prubo	56.00
3	17 "	$1\frac{1}{2}$ "	$1\frac{1}{4}$ "	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "	Luke	26.75	Lush	51.75	Prubum	64.00
4	27 "	$1\frac{1}{2}$ "	$1\frac{1}{2}$ "	$1\frac{1}{2}$ "	20 "	Lull	36.50	Lute	67.00	Prudal	89.00
5	36 "	2 "	2 "	2 "	20 "	Lump	42.00	Mace	77.50	Prudet	107.00

†"Bronze" Pumps have *all* parts coming in contact with the liquid of Bronze, including Fig. 464 Brass suction pipe and Brass hook.

Goulds Power Rotary Force Pumps

On Frame With Tight and Loose Pulleys

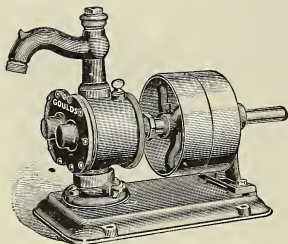


Fig. 1185 1/2

Fig 1185 1/2 represents our Rotary Force Pump on heavy cast-iron frame, with tight and loose pulleys for power. Its internal construction is described on page 154. Beyond the pulleys is a strong bearing with babbitt-lined boxes in which the driving-shaft runs. The shaft is also made long enough to take a balance wheel beyond the bearing, but this wheel is only furnished at extra price. They are largely used in creameries, breweries, wine cellars, oil refineries, etc. Fig. 1281 is same as Fig. 1185 1/2 but without spout piece. These are largely used for pumping to tanks. By the addition of a metallic lower valve any of our Rotary Pumps will handle hot liquids. For handling acid substances Bronze Pumps should be used.

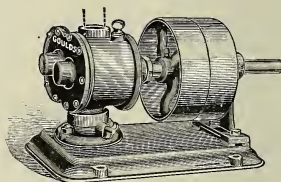


Fig. 1281

Fig. 1185 1/2. Sizes, Prices, Etc.

No.	Capacity per Minute 100 Revs.	Suction	DISCHARGES		Pulleys, Each	*Lift and Force	IRON		BRONZE CASE AND CAMS		†BRONZE	
			End of Spout	Top of Spout			Cipher	Price	Cipher	Price	Cipher	Price
1	10 gals.	1 1/4 in. pipe	1 in. hose	1 in. pipe	8 x 2 1/2 in.	60 ft.	Tubcul	\$27.00	Tubfat	\$49.00	Pulpac	\$60.00
2	13 "	1 1/4 "	1 "	1 "	8 x 2 1/2 "	60 "	Tubvey	32.00	Tubfel	56.00	Pulpel	65.00
3	17 "	1 1/2 "	1 1/4 "	1 1/4 "	8 x 2 1/2 "	60 "	Tubewd	38.00	Tubfig	63.00	Pulpig	75.00
4	27 "	2 "	1 1/2 "	1 1/2 "	12 x 3 1/2 "	60 "	Dotad	48.00	Douse	78.00	Pulpod	100.00
5	36 "	2 "	2 "	2 "	12 x 3 1/2 "	60 "	Doteb	54.00	Dove	90.00	Pulpun	120.00
6	45 "	2 1/2 "	2 1/2 "	2 1/2 "	24 x 4 "	60 "	Weigky	80.00	Wheelin	135.00	Pulpyx	175.00

Fig. 1281. Sizes, Prices, Etc.

No.	Capacity per Minute 100 Revs.	Suction	Discharge	Pulleys, Each	*Lift and Force	IRON		BRONZE CASE AND CAMS		†BRONZE	
						Cipher	Price	Cipher	Price	Cipher	Price
1	10 gals.	1 1/4 in. pipe	1 1/4 in. pipe	8 x 2 1/2 in.	60 ft.	Puntum	\$26.00	Punsis	\$48.00	Quire	\$58.00
2	13 "	1 1/4 "	1 1/4 "	8 x 2 1/2 "	60 "	Puntvo	31.00	Pusjit	55.00	Rabidnu	63.00
3	17 "	1 1/2 "	1 1/2 "	8 x 2 1/2 "	60 "	Puntwi	37.00	Puskax	62.00	Rabidno	73.00
4	27 "	2 "	2 "	12 x 3 1/2 "	60 "	Puntwtut	46.00	Puskem	76.00	Rabidot	96.00
5	36 "	2 "	2 "	12 x 3 1/2 "	60 "	Punsab	52.00	Puslit	88.00	Rabidug	116.00
6	45 "	2 1/2 "	2 1/2 "	24 x 4 "	60 "	Punsel	77.50	Quihot	132.50	Rabifa	170.00

*Total lift and force from supply to point of delivery. Pump not more than 20 feet above water.

†Bronze Pumps have all parts coming in contact with the liquid of bronze.

Goulds Rotary Oil Pumps

With Bracket for Attaching to Machines

Fig. 944 is a special pattern Rotary Force Pump, designed to pump small quantities of oil to pipe-cutting and threading machines, bolt cutters, etc., or return this oil to reservoir from which supply is taken to machines. They are simple in construction, the principal mechanism being a pair of gears, which run together in a tight case.

Fig. 944. Size, Prices, Etc.

No.	Capacity per Min. 100 Revs.	Suction	Discharge	*Lift and Force	IRON		†BRONZE	
					Cipher	Price	Cipher	Price
0	1 gal.	½ in. pipe	½ in. pipe	100 ft.	Awning	\$15.00	Calmed	\$25.00

*Total lift and force from supply to point of delivery, Pump not more than 20 feet above liquid.
†Bronze Pump is made entirely of bronze.

Fig. 1394, Special Rotary Oil Pump, adapted for same uses as Fig. 944. This Pump can be used either as a right or left-hand Pump, and will furnish a constant flow of oil when running in either direction. We furnish bracket at side of Pump when so ordered. Special brackets made to order.

Fig. 1394. Size, Price, Etc.

No.	Capacity per Minute 100 Revs.	Suction	Discharge	*Lift and Force	Cipher	Price
0	.375 gal.	¾ or ½ in. pipe	¾ or ½ in. pipe	100 ft.	Dinkl	\$10.00

Goulds Rotary Oil Pump

On Frame with Single Pulley

Fig. 1239 is designed especially to supply the increasing demand for a small and inexpensive Rotary Force Pump for oil or gasoline. It is provided with a substantial base with bearing for shaft cast thereon. Bearings are babbitted, suction is at side; single tight pulley provides power connection.

Pump furnished with tight and loose pulleys to order.

Fig. 1239. Size, Prices, Etc.

No.	Capacity per Minute 100 Revs.	Suction	Discharge	Pulley	*Lift and Force	IRON		†BRONZE	
						Cipher	Price	Cipher	Price
2	5 gals.	1 in. pipe	1 in. pipe	10 x 2½	100 ft.	Reefji	\$25.00	Reefjod	\$55.00

*Total lift and force from supply to point of delivery, Pump not more than 20 feet above liquid.
†Bronze Pump has all parts coming in contact with the liquid bronze.

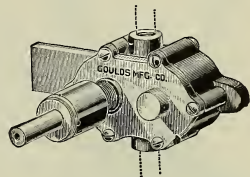


Fig. 944

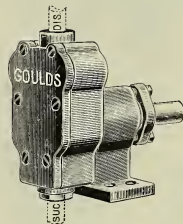


Fig. 1394

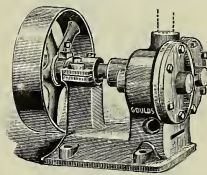


Fig. 1239

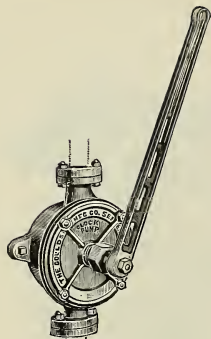


Fig. 965

Goulds Semi-Rotary "Clock" Force Pump

Double-Acting, with Removable Lever

Fig. 965 represents our Semi-Rotary "Clock" Force Pump, arranged with removable malleable lever.

Working parts of Pump comprise brass double wing, oscillating piston with bronze valves on each side of wing, encased in cylinder. The lever is attached to shaft or piston rod and the waterway of each set of valves is separated from the other in the suction-valve box. These Pumps are practically metallic fitted, and having no leather packing, may be employed in pumping hot liquids, oil, wine, etc.

In our bronze-fitted Pumps all working parts are bronze, except cylinder case and cover; in Bronze Pumps, all working parts are made of this metal.

Fig. 965. Sizes, Prices, Etc.

No.	Approximate Capacity per Minute	Suction	Discharge	*Lift and Force	BRONZE FITTED		BRONZE	
					Cipher	Price	Cipher	Price
1	4 gals.	½ in. pipe	½ in. pipe	150 ft.	Wordym	\$8.00	Worldly	\$16.00
2	5 "	¾ "	¾ "	150 "	Worec	9.50	Worm	20.00
3	6 "	1 "	1 "	125 "	Work	11.00	Wormal	27.50
4	9 "	1 ¼ "	1 ¼ "	125 "	Worker	13.00	Wormy	35.00
5	13 "	1 ½ "	1 ½ "	100 "	Workin	16.00	Wornl	42.50
6	19 "	1 ½ "	1 ½ "	100 "	World	20.00	Wornie	50.00
8	26 "	2 "	2 "	90 "	Vahev	27.50	Valency	70.00
9	36 "	2 ½ "	2 ½ "	80 "	Vahewx	40.00	Vareda	90.00

*Total lift and force from supply to point of delivery, Pump not more than 15 to 20 feet above water.

Goulds Semi-Rotary "Clock" Force Pump

Double-Acting, On Base

Fig. 982 represents our celebrated Semi-Rotary "Clock" Pump, arranged on a base or standard. This base is detachable, and the Pump can either be used with the base, or can be bolted to a plank or the side of wall, as desired. These pumps are practically metallic fitted, and may be employed for pumping hot liquids, oil, etc. Suction and discharge always fitted for wrought-iron pipe unless otherwise ordered. When fitted for lead pipe or hose an extra charge will be made.

Fig. 982. Sizes, Prices, Etc.

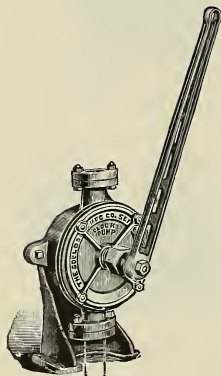


Fig. 982

No.	Capacity per Minute	Suction	Discharge	*Lift and Force	BRONZE FITTED		BRONZE	
					Cipher	Price	Cipher	Price
1	4 gals.	½ in. pipe	½ in. pipe	150 ft.	Wronga	\$9.00	Zylop	\$17.00
2	5 "	¾ "	¾ "	150 "	Wrongr	10.50	Zylopel	21.00
3	6 "	1 "	1 "	125 "	Wrongfu	12.00	Zylops	28.50
4	9 "	1 ¼ "	1 ¼ "	125 "	Wrongly	14.00	Zyloppd	36.00
5	13 "	1 ½ "	1 ½ "	100 "	Wrongne	17.00	Zylora	44.00
6	19 "	1 ½ "	1 ½ "	100 "	Wrongou	21.00	Zylored	52.50
8	26 "	2 "	2 "	90 "	Viveol	30.00	Vivepa	72.50
9	36 "	2 ½ "	2 ½ "	80 "	Vivert	42.50	Viveql	92.50

*Total lift and force from supply to point of delivery, Pume not more than 15 to 20 feet above water.

Goulds Semi-Rotary "Clock" Force Pump

Double-Acting. On Brackets

Fig. 1149 represents our Semi-Rotary "Clock" Force Pump, arranged with removable malleable lever, and elbows for hose connections.

In construction it is the same as Fig. 965, described on page 160.

Fig. 1149. Sizes, Prices, Etc.

No.	Approximate Capacity per Minute	Suction	Discharge	*Lift and Force	BRONZE-FITTED		BRONZE	
					Cipher	Price	Cipher	Price
1	4 gals.	½ in. hose	½ in. nose	150 ft.	Gulfiab	\$9.00	Hailap	\$17.00
2	5 "	¾ "	¾ "	150 "	Gulface	10.75	Haillet	22.50
3	6 "	1 "	1 "	125 "	Gulfiab	12.50	Hailik	29.00
4	9 "	1 ¼ "	1 ¼ "	125 "	Gulfog	15.00	Hailod	37.00
5	13 "	1 ½ "	1 ½ "	100 "	Gulfus	18.50	Hailus	45.00
6	19 "	1 ½ "	1 ½ "	100 "	Gelyx	23.00	Haims	53.00

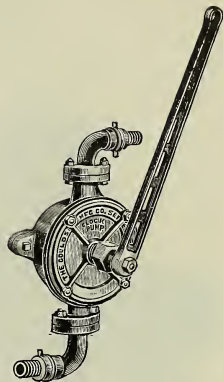


Fig. 1149

Goulds Semi-Rotary "Clock" Force Pump

On Base with Air Chamber

Fig. 995 represents our "Clock" Pump, mounted on iron standard, with air chamber and cock spout. So arranged, these Pumps may be used for drawing water at the spout, or for forcing the water above the Pump to tanks, bath-rooms, etc. Having metal valves, they may be employed for pumping hot liquids, oil, etc. Suction and discharge always fitted for wrought-iron pipe unless otherwise ordered. When fitted for lead pipe or hose an extra charge will be made.

Fig. 995. Sizes, Prices, Etc.

No.	Approximate Capacity per Minute	Suction	Discharge	*Lift and Force	BRONZE-FITTED		BRONZE	
					Cipher	Price	Cipher	Price
1	4 gals.	½ in. pipe	½ in. pipe	150 ft.	Zutela	\$11.00	Zutelop	\$19.00
2	5 "	¾ "	¾ "	150 "	Zuteled	12.50	Zutelny	23.00
3	6 "	1 "	1 "	125 "	Zylomp	14.00	Zyma	30.50
4	9 "	1 ¼ "	1 ¼ "	125 "	Zylonti	16.00	Zym	38.00
5	13 "	1 ½ "	1 ½ "	100 "	Zyloo	19.00	Zymad	46.00
6	19 "	1 ½ "	1 ½ "	100 "	Zyloosd	24.00	Zymeg	56.00
8	26 "	2 "	2 "	90 "	Vareef	25.00	Varegat	77.50
9	36 "	2 ½ "	2 ½ "	80 "	Vareful	47.50	Varehes	97.50

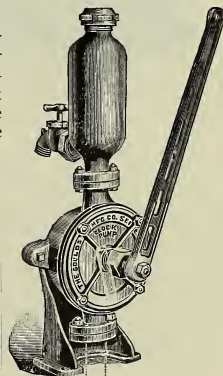


Fig. 995

*Total lift and force from supply to point of delivery, Pump not more than 15 to 20 feet above water.

Goulds Power Rotary Force Pump

With Tight and Loose Pulleys For Belt

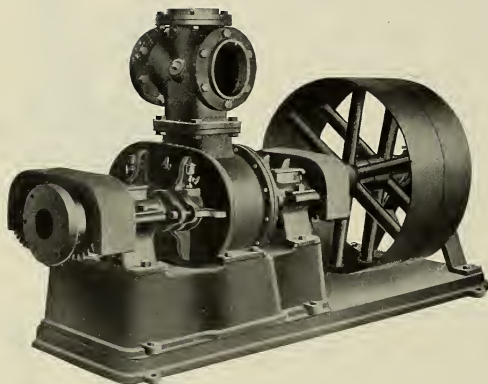


Fig. 1350. No. 4

Fig. 1350—Power Rotary Force Pump, for 100 pounds working pressure, or 230 feet elevation.—General Water Supply, Pumping Oil, Chemicals, etc.

The case is accurately bored and finished in the best possible manner. The main bearings are lined with babbitt metal. The two shafts are geared together at both ends of the Pump. Gears are machine cut and protected by gear guards. Numbers 1 to 4 are mounted on cast iron bed plate, which preserves perfect alignment. Numbers 5 and 6 are provided with heavy out-board bearing supporting pulley shaft.

Suction connection is made within the base directly beneath the case. Pulley shaft coupling can be disconnected and Pump turned end for end on bed plate where necessary to procure proper running direction of Pump.

Nos. 1 and 2 have two discharge openings fitted with interchangeable flanges, one tapped for pipe and the other threaded for hose coupling and furnished with cap.

Nos. 3, 4, 5 and 6 have three discharge openings, two being fitted as above and the third with blank flange.

For Tables of Capacities and Power see page 168.

Fig. 1350. Sizes, Capacities, Prices, Etc.

No.	Capacity one Revolution	*Speed and Capacity per Minute, Varying with Kind of Work and Pressure	Suction	Discharges	Tight and Loose Pulleys	IRON		BRONZE CASE AND CAMS	
						Cipher	Price	Cipher	Price
1	.25 gal.	100 to 250 revs., 25 to 60 gals.	3 in. pipe	1½ in. pipe and 1½ in. hose	12x3½ in.	Vevbig	\$115.00	Vegecl	\$155.00
2	.50 "	100 to 200 " 50 to 100 "	4 "	2 " " 2 "	16x4 "	Vevcar	130.00	Vegeclm	195.00
3	1.00 "	100 to 175 " 100 to 175 "	5 "	2½ " " 2½ "	18x5 "	Vevcet	185.00	Verbubs	305.00
4	1.67 "	100 to 150 " 165 to 250 "	6 "	4 " " 2½ "	24x6 "	Vepate	275.00	Verbve	475.00
5	2.50 "	75 to 125 " 185 to 310 "	7 "	5 " " 2½ "	30x8 "	Vepems	350.00	Verbwf	600.00
6	4.50 "	60 to 100 " 270 to 450 "	8 "	6 " " 2½ "	36x10 "	Vegebs	550.00	Verdevs	950.00

*Speeds given are a fair rate for continuous running; can be doubled for occasional service.

Goulds Power Rotary Force Pump

On Frame, With Couplings on Each End of Driving Shaft

Fig. 1351—Power Rotary Force Pump, for 100 pounds working pressure, or 230 feet elevation.—General Water Supply, Pumping Oil, Chemicals, etc.

Working parts are mounted on heavy cast iron base. The shafts are geared together at both ends of the Pump. Gears are machine cut and protected by gear guards.

The main bearings are lined with babbitt metal. The case is accurately bored and finished in the best possible manner.

Suction connection is made within the base directly beneath the case, and is regularly fitted for wrought iron pipe.

Driving connections can be made at either end of the Pump. Proper direction or rotation of the Pump can be had regardless of the direction or rotation of the driving shaft because the rotation of the Pump is reversed by turning the Pump end to end on foundations.

Nos. 1 and 2 have two discharge openings fitted with interchangeable flanges, one tapped for pipe and the other fitted for hose coupling and furnished with cap.

Nos. 3, 4, 5 and 6 have three discharge openings, two being fitted as above and the third with blank flange.

For Tables of Capacities and Power see page 168.

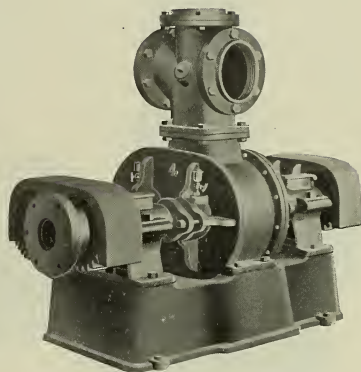


Fig. 1351

Fig. 1351. Sizes, Prices, Etc.

No.	Capacity One Revolution	†Speed and Capacity per Minute	Suction	Discharges	IRON		BRONZE CASE AND CAMS		*BRONZE	
					Cipher	Price	Cipher	Price	Cipher	Price
1	¼ gal.	100 to 250 revs., 25 to 60 gals.	3 in. pipe	1½ in. pipe and 1½ in. hose	Draft	\$100.00	Weaning	\$140.00	Raptulo	\$170.00
2	½ "	100 to 200 " 50 to 100 "	4 "	2 " " 2 "	Drag	115.00	Weapon	180.00	Raptums	230.00
3	1 "	100 to 175 " 100 to 175 "	5 "	2½ " " 2½ "	Drain	170.00	Wear	290.00	Raptun	390.00
4	1½ "	100 to 150 " 105 to 250 "	6 "	4 " " 2½ "	Drake	250.00	Wearda	450.00	Raptva	625.00
5	2½ "	75 to 125 " 185 to 310 "	7 "	5 " " 2½ "	Dram	325.00	Wearer	575.00	Raptvex	875.00
6	4½ "	60 to 100 " 270 to 450 "	8 "	6 " " 2½ "	Dripom	525.00	Wearfu	925.00	Raptvil	1425.00

†Speeds given are a fair rate for continuous running; can be doubled for occasional service. Pumps are strong enough to force against about 100 pounds pressure.

**"Bronze" Pumps have all parts coming in contact with the liquid of bronze.

Goulds Underwriters Rotary Fire Pump

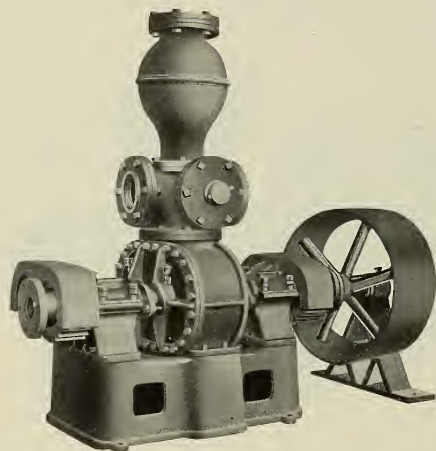


Fig. 1353. No. 6

Fig. 1353 represents our Power Rotary Fire Pump, surmounted with air chamber, with outside bearings and one wide pulley for belt power. Driving shaft may be extended any distance, and outside bearing with pulley located at end. Flanged Coupling is interchangeable at either end, thus readily adapting Pumps for any place or position.

The suction is regularly fitted for wrought-iron pipe. It will be fitted for cast-iron pipe or hose when so ordered. There are five discharge openings on all Pumps. One has Flange cut for 2½-inch hose coupling and furnished with cap. Another has Flange tapped for wrought-iron pipe of size stated in table below; the other outlets are provided with blank flanges. All five flanges are interchangeable. See page 154 for construction view and description.

An Underwriters Water Relief Valve should be placed close to the Pump. Valves for the several sizes should be:

For the No. 1 Pump, 1½ inch			
" 2	" 2	"	
" 3	" 2½	"	
" 4	" 3	"	
" 5	" 3½	"	
" 6	" 4	"	

For Tables, Capacities, Power and Effective Fire Streams, see page 168.

Fig. 1353. Sizes, Prices, Etc.

Size	Capacity One Revol'n	Speed and Capacity per Minute for Good Fire Service		Suction	Discharges	Single Pulley	IRON		BRONZE CASE AND CAMS	
							Cipher	Price	Cipher	Price
No. 1	¼ gal.	400 to 500 revs.,	100 to 125 gals.	3 in. pipe	1½ in. hose and 1½ in. pipe	14x 8 in.	Allyer	\$125.00	Altactur	\$165.00
" 2	½ "	350 to 400 "	175 to 200 "	4 "	2 " " 2 "	18x 9 "	Alsodin	140.00	Altarin	205.00
" 3	1 "	350 to 400 "	350 to 400 "	5 "	2½ " " 2½ "	22x12 "	Weald	200.00	Raptvce	320.00
" 4	1½ "	300 to 350 "	500 to 580 "	6 "	2½ " " 4 "	24x14 "	Wealden	290.00	Raptvud	490.00
" 5	2 "	250 to 300 "	625 to 750 "	7 "	2½ " " 5 "	30x15 "	Wealdis	375.00	Raptvyw	625.00
" 6	4½ "	200 to 250 "	900 to 1125 "	8 "	2½ " " 6 "	36x16 "	Wealar	600.00	Raptwax	1000.00

See pages 276 to 279 for Prices, Pipe, Hose, Couplings, Play Pipes, etc.

Goulds Underwriters Rotary Fire Pump

With Coupling for Driving Shaft.

Fig. 1352 has working parts mounted on heavy cast iron base, which preserves perfect alignment. The shafts are geared together at both ends of Pump. Gears are machine cut and protected by gear guards.

The main bearings are lined with babbitt metal. The case is accurately bored and finished in best possible manner.

Driving connection can be made at either end of the Pump.

Suction connection is made within the base directly beneath the case and is regularly fitted for wrought iron pipe.

There are five discharge openings on all Pumps; one has flange cut for $2\frac{1}{2}$ inch hose coupling and furnished with cap; another has flange tapped for iron pipe; the other outlets are provided with blank flanges. All five flanges are interchangeable.

An Underwriters Water Relief Valve should be placed close to the Pump.

Valves for the several sizes should be:

For the No. 1 Pump, $1\frac{1}{2}$ inch.	
" 2 "	" "
" 3 "	$2\frac{1}{2}$ "
" 4 "	3 "
" 5 "	$3\frac{1}{2}$ "
" 6 "	4 "

For table of Capacities, Power, and Efficient Fire Streams, see page 168.

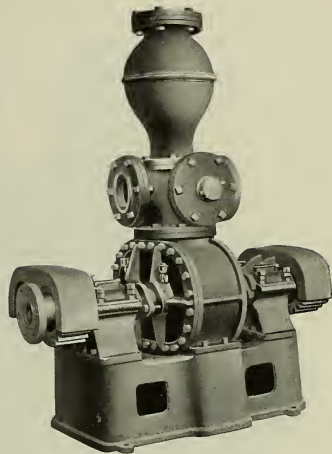


Fig. 1352. No. 6

Fig. 1352. Sizes, Capacities, Prices, Etc.

No.	Capacity one Revolution	Speed and Capacity per Minute for Good Fire Service	Suction	Discharges	IRON		BRONZE CASE AND CAMS	
					Cipher	Price	Cipher	Price
1	$\frac{1}{4}$ gal.	450 to 500 revs., 112 to 125 gals.	3 in. pipe	$1\frac{1}{2}$ in. hose and $1\frac{1}{2}$ in. pipe	Abacool	\$110.00	Abuten	\$150.00
2	$\frac{1}{2}$ "	400 to 450 " 200 to 225 "	4 "	2 " " 2 "	Ablef	125.00	Achedin	190.00
3	1 "	350 to 400 " 350 to 400 "	5 "	$2\frac{1}{2}$ " " $2\frac{1}{2}$ "	Vedvcl	175.00	Rabiins	295.00
4	$1\frac{1}{2}$ "	300 to 350 " 500 to 580 "	6 "	$2\frac{1}{2}$ " " 4 "	Vevade	260.00	Rabjoc	460.00
5	$2\frac{1}{2}$ "	250 to 300 " 625 to 750 "	7 "	$2\frac{1}{2}$ " " 5 "	Vevbad	335.00	Rabjud	585.00
6	$4\frac{1}{2}$ "	200 to 250 " 900 to 1125 "	8 "	$2\frac{1}{2}$ " " 6 "	Vevble	535.00	Rabkoo	935.00

Goulds Underwriters Rotary Fire Pump

WITH FRICTIONAL GEARING.

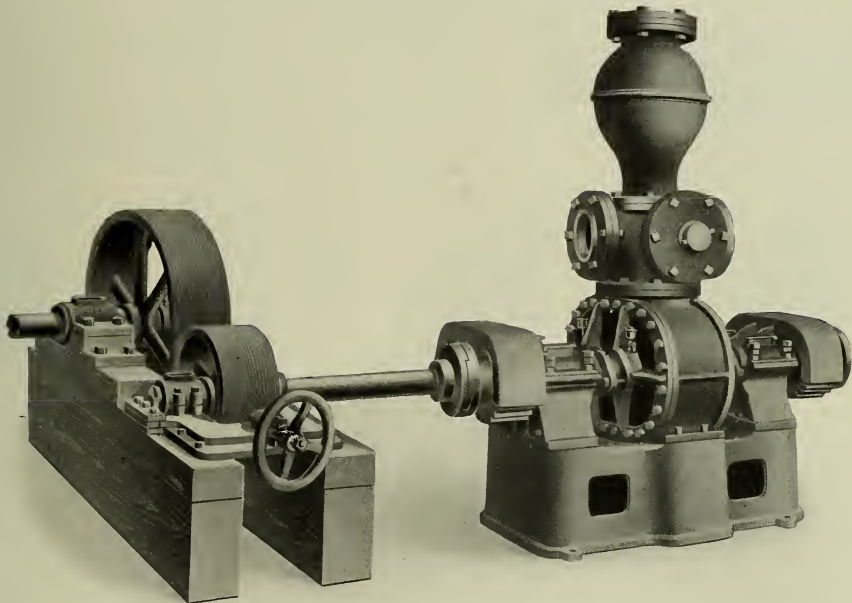


Fig. 1370. No. 6

For Electric Fire Pumps, Figure 1354, for data of standard Rotary Fire Pumps, Figs. 1352, 1353, for Power to drive Rotary Pumps, and for tables and notes on Fire Streams, see pages 164, 165, 166, 168.

Goulds Underwriters Rotary Fire Pump

TABLE OF CAPACITIES AND POWER

Size	Revolutions per Minute	Gallons per Minute	75 lbs. Pressure	100 lbs. Pressure	125 lbs. Pressure	175 lbs. Pressure
No. 1	350	87.5	8 H. P.	10 H. P.	13 H. P.	18 H. P.
	400	100	9 "	12 "	15 "	21 "
	450	112.5	10 "	13 "	17 "	23 "
	500	125	11 "	15 "	18 "	26 "
No. 2	250	125	11 "	15 "	18 "	26 "
	300	150	13 "	18 "	22 "	31 "
	350	175	16 "	20 "	26 "	36 "
	400	200	18 "	24 "	29 "	41 "
No. 3	250	250	18 "	24 "	30 "	36 "
	300	300	23 "	30 "	37 "	45 "
	350	350	26 "	34 "	43 "	51 "
	400	400	30 "	40 "	50 "	60 "
No. 4	200	325	23 "	31 "	39 "	46 "
	250	405	30 "	39 "	49 "	58 "
	300	487	35 "	47 "	60 "	70 "
	350	550	45 "	60 "	75 "	90 "
No. 5	150	375	27 "	36 "	45 "	54 "
	200	500	36 "	48 "	60 "	72 "
	250	625	45 "	60 "	75 "	90 "
	300	750	54 "	72 "	90 "	108 "
No. 6	100	450	33 "	43 "	54 "	65 "
	150	675	49 "	65 "	81 "	98 "
	200	900	65 "	86 "	108 "	130 "
	250	1125	81 "	108 "	135 "	163 "

TABLE OF EFFECTIVE FIRE STREAMS. JOHN R. FREEMAN, C. E.

Using 100 feet of 2½-inch ordinary best quality rubber-lined hose between nozzle and hydrant, or Pump

Smooth Nozzle, Size.....	¾-Inch						½-Inch						1-Inch					
Pressure at Hydrant, lbs.	32	43	54	65	75	86	34	46	57	69	80	91	37	50	62	75	87	100
Pressure at Nozzle, lbs.	30	40	50	60	70	80	30	40	50	60	70	80	30	40	50	60	70	80
*Vertical Height, feet, of Effective Stream	48	60	67	72	76	79	49	62	71	77	81	85	51	64	73	79	85	89
*Horizontal Distance, feet, Effective Stream	37	44	50	54	58	62	42	49	55	61	66	70	47	55	61	67	72	76
Gallons Discharged per Minute	90	104	116	127	137	147	123	142	159	174	188	201	161	186	208	228	246	263

Smooth Nozzle, Size.....	1¼-Inch						1½-Inch						1¾-Inch					
Pressure at Hydrant, lbs.	42	56	70	84	98	112	49	65	81	97	113	129	58	77	96	116	135	154
Pressure at Nozzle, lbs.	30	40	50	60	70	80	30	40	50	60	70	80	30	40	50	60	70	80
*Vertical Height, feet, of Effective Stream	52	65	75	83	88	92	53	67	77	85	91	95	53	69	79	87	92	97
*Horizontal Distance, feet, Effective Stream	50	59	66	72	77	81	54	63	70	76	81	85	56	66	73	79	84	88
Gallons Discharged per Minute	206	238	266	291	314	336	256	296	321	363	392	419	315	363	406	445	480	514

Two hundred and fifty gallons per minute is a good standard fire stream with 80 pounds pressure at the hydrant.

*Spray, or drops will go from 22 per cent. to 56 per cent. higher, and from 120 per cent. to 150 per cent. farther horizontally, but figures given in table are for "Effective" fire streams that will make a black mark where they hit.

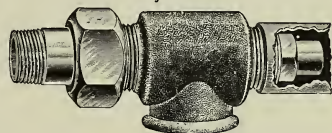
Goulds Centrifugal Pump Fittings

Ejectors are used for priming or charging Centrifugal Pumps where steam can be obtained. A Flap Valve or Foot Valve, as shown below, is used in connection with Ejector.

Sizes, Prices, Etc.

Number and Size Centrifugal Pumps	1½ and 1¾	2 and 2½	3	4	5 and 6	8 and 10	12 and 15	18	22
Number of Ejector	1	1	2	3	4	5	6	7	8
Diameter of Steam Pipe . .	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	1¾ in.	2 in.	2½ in.	3 in.
Diameter of Delivery and Suction Pipe	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	2½ in.	3 in.	3 in.
Price of Ejector and Valves for Connecting . .	\$8	\$8	\$12	\$15	\$25	\$30	\$35	\$45	\$55

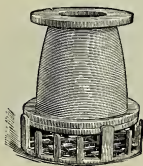
Ejector



Flap Valve



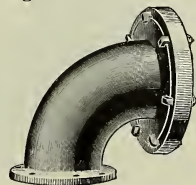
Foot Valve



Long Radius Elbow, Plain



Long Radius Swivel Elbow



Flap Valve is used on end of discharge pipe to prevent air from entering when using Ejector.

Foot Valve is used on end of suction pipe to hold column of water and keep pump primed. Iron Foot Valves only furnished with strainer when ordered.

Long Radius Plain Cast Iron Elbow is very desirable for use on Centrifugal Pump, as it does not impede the flow of water as does a short turn.

Long Radius Swivel Elbow performs the same office as the Plain one described above, but is often found more convenient.

Flap Valves and Foot Valves. Sizes, Prices, Etc.

For Centrifugal Pump No.	1½	1¾	2	2½	3	4	5	6	8	10	12	15	18	22
Flap Valve, Flanged	\$5	\$6	\$8	\$9	\$9	\$13	\$19	\$22	\$28	\$36	\$44	\$60	\$88	\$150
Foot Valve, Iron, Flanged	5	6	7	8	9	12	15	20	30	40	50	75	110	150
Brass	8	9	12	15	18	25	30	40						

Long Radius Plain and Swivel Elbows. Sizes, Prices, Etc.

Size	1½-inch	1¾-inch	2-inch	2½-inch	3-inch	4-inch	5-inch	6-inch	8-inch	10-inch	12-inch	14-inch	15-inch	18-inch	20-inch	22-inch
Plain Iron Elbow	\$1.00	\$1.25	\$1.50	\$1.75	\$2.50	\$3.50	\$4.00	\$5.00	\$10.00	\$15.00	\$17.50	\$22.00	\$25.00	\$30.00	\$38.00	\$50.00
Swivel Iron Elbow	1.25	1.60	1.90	2.10	3.50	4.40	5.00	6.25	12.50	19.00	22.00	27.00	31.50	37.50	47.50	62.00

Goulds Vertical Centrifugal Pumps

Submerged and Suction Types

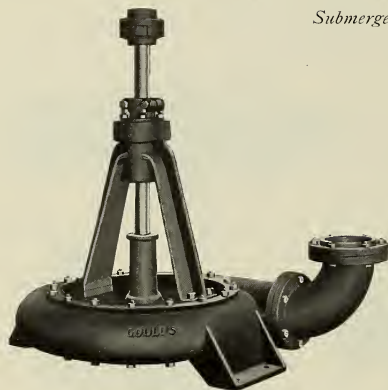


Fig. 1900, Submerged Type

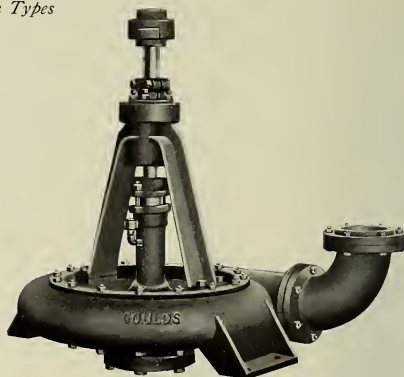


Fig. 1901, Suction Type

Pump No. Diameter Discharge Opening Inches	Economical Capacity per Minute	Horse Power Required for Each foot Elevation	REVOLUTIONS PER MINUTE AT WHICH PUMPS SHOULD BE RUN TO DELIVER "ECONOMICAL CAPACITY" TO DIFFERENT ELEVATIONS									Pump No. Diameter Discharge Opening Inches
			5 feet	10 feet	15 feet	20 feet	25 feet	30 feet	35 feet	40 feet	50 feet	
1½	70 gal.	.058	570	806	988	1141	1276	1398	1510	1614	1805	1½
1¾	90 "	.075	428	605	741	856	957	1049	1133	1210	1354	1¾
2	120 "	.10	342	484	593	684	765	838	906	968	1082	2
2½	185 "	.15	321	454	556	642	718	786	849	908	1015	2½
3	265 "	.22	302	427	524	604	675	740	799	854	955	3
3½	360 "	.30	302	427	524	604	675	740	799	854	955	3½
4	470 "	.36	285	404	498	570	638	700	755	808	902	4
5	735 "	.45	256	362	445	514	575	629	680	727	813	5
6	1,060 "	.59	214	302	370	428	478	524	566	605	676	6
8	2,000 "	1.	183	259	317	366	409	448	485	517	579	8
10	3,000 "	1.52	168	238	291	336	376	411	445	475	532	10
12	4,300 "	2.	133	188	230	266	298	326	352	376	421	12
15	7,000 "	3.5	105	148	181	209	234	256	277	295	331	15
15*	7,000 "	3.5	151	213	261	301	337	369	399	426	477	15*
18	10,000 "	4.50	105	148	181	209	234	256	277	295	331	18
18*	10,000 "	4.50	151	213	261	301	337	369	399	426	477	18*
20	12,000 "	5.40	144	202	245	285	321	348	376	400	448	20

* Refers to low-lift Pumps.

Above table gives *correct* speed of our Pumps as employed under usual conditions of pumping. If water must be forced through a number of bends and elbows, or a great length of piping, the above speed must be somewhat increased.

Goulds Vertical Centrifugal Pumps

Submerged and Suction Types

Fig. 1900—Shown on the opposite page, is our Vertical Submerged Centrifugal Pump. This pump must be placed below the surface of the liquid to be pumped and needs no priming. The weight of the shaft is entirely supported by the yoke which has a bearing with adjustment at the top, making a very durable Pump, there being no step bearing inside the shell to cut and wear. We will fit with vertical timber castings on the sides of the shell instead of feet if so ordered.

Fig. 1901—Vertical Suction Centrifugal Pump, may be attached direct to driven wells, or placed in pits above the surface of the water. It may be placed with safety in wells where there is danger of the water rising, as it will run submerged. The yoke, with adjustable bearing at the top, supports the entire weight of the shaft and is easy of access for attention. The gland is provided with a water seal. We will fit with vertical timber castings on the sides of the shell instead of feet if so ordered.

For Foot Valves, Flap Valves, Ejectors, etc., see page 169.

Fig. 1900 and 1901. Sizes, Capacities, Prices, Etc.

Pump No. Diameter Dis- charge Opening Inches	Economical Capacity per Minute	Diameter and Face of Pulley in Inches	Floor Space Required in Inches	Distance from Bottom of Pump to Center of Coupling	Coupling Bored for Connecting Shaft, Diameter	FIG. 1900. SUBMERGED TYPE, WITH ELBOW, ONE PAIR COUPLINGS, PULLEY AND ONE BEARING				FIG. 1901. SUC. TYPE WITH ELBOW, ONE PAIR COUP'G., PUL. AND ONE BEARING				Size Pipe Suction Flange Fig. 1901	
						IRON		BRASS		IRON		Cipher	Price		
						Cipher	Price	Cipher	Price	Cipher	Price				
1½	70 gal.	5x 5 in.	13 x 20 in.	21½ in.	¾ in.	Zymek	\$40.00	Bill	\$70.00	Reefky	\$44.00	2	in.		
1¾	90 "	6x 5 "	17 x 24 "	24 "	1 "	Pant	50.00	Peak	90.00	Reelfu	55.00	2	"		
2	120 "	6x 6 "	21 x 28 "	28¾ "	1½ "	Pare	65.00	Peal	110.00	Reefmor	72.00	3	"		
2½	185 "	7x 6 "	23 x 31 "	30¾ "	1¾ "	Wander	80.00	Wang	135.00	Reefnir	88.00	3½	"		
3	265 "	7x 8 "	25 x 33 "	34¼ "	1½ "	Perk	95.00	Peat	150.00	Reefnud	105.00	4	"		
3½	360 "	8x 8 "	26 x 35 "	35½ "	1½ "	Tookfvx	103.00	Tookfop	200.00	Tookfir	114.00	4½	"		
4	470 "	10x 8 "	28 x 38 "	37¾ "	1¾ "	Part	110.00	Peck	240.00	Reefoj	122.00	5	"		
5	735 "	10x10 "	32 x 43 "	43 "	1½ "	Zymel	140.00	Bind	315.00	Reefju	155.00	6	"		
6	1,060 "	14x12 "	38 x 52 "	48½ "	1½ "	Pass	170.00	Peek	360.00	Reefgut	190.00	8	"		
8	2,000 "	18x12 "	45 x 56 "	65 "	2 "	Past	265.00	.....	.....	Reegas	295.00	10	"
10	3,000 "	20x12 "	51 x 68 "	65 "	2 "	Pate	330.00	.....	.....	Reegcet	365.00	12	"
12	4,300 "	24x14 "	63 x 72 "	72 "	2¾ "	Path	420.00	.....	.....	Reegim	475.00	15	"
15	7,000 "	30x16 "	77 x 102 "	78 "	3¼ "	Pave	600.00	.....	.....	Reegog	665.00	18	"
15*	7,000 "	30x15 "	60 x 71 "	78 "	3¼ "	Regeab	480.00	.....	.....	Reegum	530.00	18	"
18	10,000 "	36x18 "	98 x 126 "	84 "	3¾ "	Pawn	950.00	.....	.....	Reegvo	1050.00	20	"
18*	10,000 "	30x16 "	66 x 78 "	78 "	3¼ "	Regeel	850.00	.....	.....	Reegvus	940.00	20	"
20	12,000 "	36x20 "	73 x 92 "	84 "	4 "	Regeff	1200.00	.....	.....	Reegwe	1325.00	22	"

* Refers to Low-Lift Pumps.

For table of revolutions and power required to lift water to different heights, see page 170.

Goulds Horizontal Centrifugal Pumps

SIDE SUCTION PATTERN

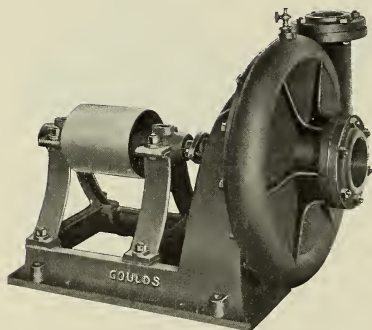


Fig. 1902, Without Primer

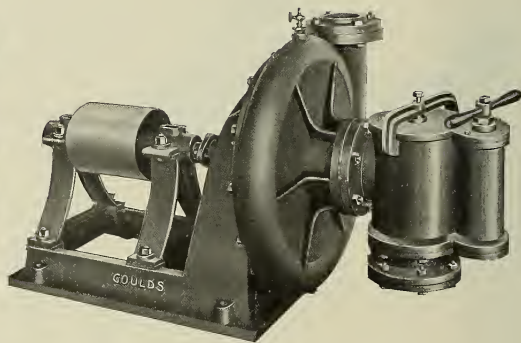


Fig. 1903, With Primer

Goulds Horizontal Centrifugal Pumps

Fig. 1902—Standard Side Suction Centrifugal Pump. This Pump is designed and constructed throughout on very liberal lines. The case or shell is of the solid type, very heavy and the runner of large diameter, adapting the pump for slow speed. The inside of the case is machine finished and the runner machined and accurately fitted to it; and our construction gives a closer running fit and greater efficiency than can be obtained in the old style split case. The shaft is large and the bearings are generously proportioned, an ample stuffing box and gland being provided. The discharge can be readily adjusted at any angle. All parts are accurately interchangeable and any part can be readily duplicated.

Fig. 1903—Is our Standard Side Suction Centrifugal Pump with the addition of a suction primer. It is sometimes desirable to prime the smaller pumps by hand. This Pump is primed by opening the air-cock at the top of the case and then using the hand pump on the primer until the water flows from the air-cock, when the Pump can be started. No foot valve or flap valve is necessary when this primer is used. On sizes above 6 inches it is advisable to use an ejector and either a foot valve or a flap valve.

For Foot Valves, Flap Valves, Ejectors, etc., see page 169.

Figs. 1902 and 1903. Sizes, Capacities, Prices, Etc.

No. Pump Diameter of Discharge Inches	Size Pipe Flange on Suction	Economical Capacity per Minute	Diameter and Face of Pulley in Inches	Floor Space Required in Inches. Without Primer	FIG. 1902. WITHOUT PRIMER				FIG. 1903. WITH PRIMER			
					Iron		Brass Fitted Extra	Brass	Iron		Brass Fitted Extra	Brass
					Cipher	Price		Price	Cipher	Price		Price
1½	2 in.	70 gals.	5x 5	13x 21	Bung	\$45.00	\$15.00	\$85.00	Cabined	\$55.00	\$15.00	\$105.00
1¾	2 "	90 "	6x 5	17x 24	Mane	60.00	18.00	100.00	Oval	70.00	18.00	120.00
2	3 "	120 "	6x 6	21x 31	Many	75.00	22.00	125.00	Oven	90.00	22.00	150.00
2½	3½ "	185 "	7x 6	23x 32	Wanting	90.00	27.00	150.00	Wapiti	105.00	27.00	175.00
3	4 "	265 "	7x 8	25x 34	Mar	110.00	30.00	175.00	Over	130.00	30.00	210.00
3½	4½ "	360 "	8x 8	26x 36	Tookfg	120.00	40.00	230.00	Tookfit	145.00	40.00	270.00
4	5 "	470 "	10x 8	28x 39	Mare	130.00	48.00	275.00	Oxen	155.00	48.00	330.00
5	6 "	735 "	10x10	32x 46	Broadcast	165.00	72.00	350.00	Bugler	195.00	72.00	420.00
6	8 "	1,060 "	14x12	38x 50	Mark	200.00	108.00	410.00	Oyer	240.00	108.00	495.00
8	10 "	2,000 "	20x12	45x 64	Marl	310.00	.....	.....	Pace	375.00	.....	.....
10	12 "	3,000 "	24x12	51x 69	Mars	395.00	.....	.....	Pack	470.00	.....	.....
12	15 "	4,300 "	30x14	63x 71	Mart	500.00	.....	.....	.....	.....	.....	.....
15	18 "	7,000 "	40x15	77x 80	Mash	850.00	.....	.....	.....	.....	.....	.....
15*	18 "	7,000 "	30x15	60x 68	Regegs	710.00	.....	.....	.....	.....	.....	.....
18	20 "	10,000 "	40x16	93x103	Regeho	1,300.00	.....	.....	.....	.....	.....	.....
18*	20 "	10,000 "	30x16	66x 72	Regfat	1,150.00	.....	.....	.....	.....	.....	.....
20	22 "	12,000 "	36x20	73x 83	Regfen	1,540.00	.....	.....	.....	.....	.....	.....

*Refers to Low Lift Pumps.

Cipher is given for iron pump only. When Brass-Fitted Pump is wanted add to cipher the word "Brass-Fitted." When Brass is wanted add the word "Brass."

For table of revolutions and power required to elevate water to different heights, see page 170.

Goulds Double-Suction Centrifugal Pump

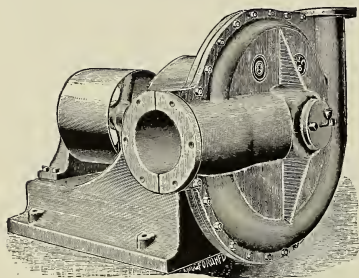


Fig. 1158

This differs from other Horizontal Pumps in having a suction inlet on each side of the pump case, so that an equal amount of water enters on each side of the piston, thus perfectly balancing it and preventing all end-thrust of pump shaft. The pump is especially designed for use where the lift is high or suction pipe long, and is made very strong to withstand heavy pressure. It passes muddy and gritty water without injury to parts. All waterways in suction inlet of pump case are proportioned so as to give a free and easy flow of uniform velocity.

The shaft is turned steel, running in bearings having a length about six times the diameter of the shaft. The pump shell can be swiveled on the hooded frame, so as to bring suction and discharge in the position most suitable for its work.

For Foot Valves, Flap Valves, Ejectors, etc., see page 169.

Fig. 1158. Sizes, Capacities, Prices, Etc.

No. Pump Diameter Dis- charge, Inches	Economical Capacity per Minute	Horse Power Required per Foot Elevation	Diameter Suction Opening	PULLEY		Floor Space Required in Inches	IRON		Price
				Diameter and Face			Cipher		
1 ½	70 gals.	.058 H. P.	2 in.	7 x 8 in.		20 x 32	Maulin		\$ 60.00
1 ¾	90 "	.075 "	2 "	7 x 8 "		20 x 32	Mauljb		75.00
2	120 "	.10 "	3 ½ "	8 x 8 "		26 x 35	Maulki		90.00
2 ½	180 "	.15 "	3 ½ "	8 x 8 "		26 x 35	Maully		100.00
3	260 "	.22 "	3 ½ "	8 x 8 "		27 x 38	Maulmu		125.00
4	470 "	.30 "	5 "	10 x 10 "		33 x 40	Maulnx		175.00
5	735 "	.45 "	6 "	12 x 12 "		37 x 49	Mauman		250.00
6	1,050 "	.59 "	7 "	15 x 12 "		43 x 51	Maumet		350.00
8	2,000 "	1.00 "	9 "	20 x 12 "		52 x 61	Maumfb		500.00
10	3,000 "	1.52 "	11 "	24 x 12 "		57 x 73	Maumgo		775.00
12	4,200 "	2.00 "	13 "	30 x 14 "		69 x 82	Maumhs		1,120.00
15	7,000 "	3.50 "	18 "	40 x 15 "		89 x 78	Maumik		1,325.00
18	10,000 "	4.50 "	20 "	40 x 16 "		90 x 80	Maumjt		2,050.00

Specifications of larger Pumps on Application. Brass, bronze or lead Pumps built to order. Foot valves extra.

Goulds Sand and Dredging Pump

Fig. 1181 shows our Sand and Dredging Pump. The Pump shell is made in one casting and is very heavy, especially in the part that receives the greatest wear. A removable disk is fitted to the suction side of Pump, which can be readily removed, and as this opening is larger than the piston, this can be withdrawn without disturbing the Pump shell or any other part. The pistons have removable liners. It is heavily ribbed inside and has a large surface on the bottom. The bearing pedestals are very strong and heavy, so as to prevent any vibration.

We can furnish any of our Dredging Pumps with engines, single or compound, directly connected, and will, upon application, make special estimates for same.

Pumps furnished with Suction and Discharge Elbows, Flap Valve and Ejector.

For Foot Valves, Flap Valves, Ejectors, etc., see page 169.

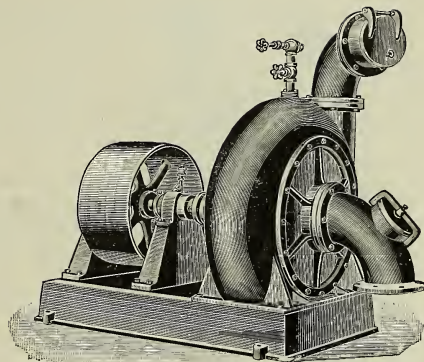


Fig. 1181 Sand and Dredging Pump

Fig. 1181. Sizes, Capacities, Prices, Etc.

Pump No. Diameter Discharge Opening Inches	Diameter Suction	Capacity per Min.	CUBIC YARDS MATERIAL PER HOUR Per Cent. of Solids			Horse Power Required for Each 10 Feet Elevation	Size of Pulleys	Will Pass Solids Diameter Inches	IRON PUMP, WITH SUCTION AND DISCHARGE ELBOWS, FLAP VALVE AND EJECTOR	
			10 Per Cent.	15 Per Cent.	20 Per Cent.				Cipher	Price
4	4 in.	470 gals.	14 yds.	21 yds.	28 yds.	4	12 x 12 in.	2	Remach	\$210.00
6	6 "	1,050 "	30 "	45 "	60 "	8	20 x 12 "	4½	Remaig	300.00
8	8 "	2,000 "	60 "	90 "	120 "	15	24 x 14 "	6	Remago	475.00
10	10 "	3,000 "	90 "	135 "	180 "	25	30 x 15 "	8	Remahi	600.00
12	12 "	4,200 "	125 "	190 "	250 "	30	36 x 20 "	10	Repemo	850.00
15	15 "	7,000 "	210 "	315 "	420 "	50	42 x 24 "	10	Repens	1775.00
18	18 "	10,000 "	300 "	450 "	600 "	70	48 x 30 "	10	Repeol	2000.00

Goulds Steam Centrifugal Pumps

Fig. 1344, Standard Side-Suction Steam Pump, shown on this page, is the type most extensively used for all purposes, and for general work is the best Pump on the market. As a machine it is perfect. It is very strong and solid. It has large diameter shaft running in long bearings lined with best babbitt metal. All parts are accurately machine fitted. It is furnished complete with oilers and wrenches, and with suction and discharge flanges, threaded for standard wrought-iron pipe unless otherwise ordered.

For Foot Valves, Flap Valves, Ejectors, etc., see page 169.

Fig. 1344. Sizes, Capacities, Etc.

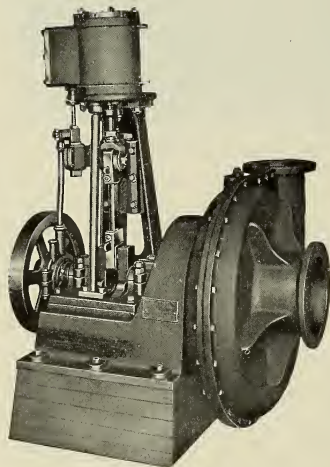


Fig. 1344

No. Pump Diameter Discharge Opening Inches	Economical Capacity, Gallons per Minute	Suitable for Elevations in Feet up to	SIZE STEAM CYLINDER		Size Steam Pipe, Inches	Size Exhaust Pipe, Inches	Cipher
			Diameter	Stroke			
2	120	25	3	3	3/4	1	Baldness
2 1/2	180	25	3	3	3/4	1	Ballad
3	260	25	3	3	3/4	1	Ballet
4	470	25	4	4	3/4	1	Balmoral
4	470	25	5	5	1	1 1/4	Bandana
5	735	25	5	5	1	1 1/4	Bandcoat
6	1,050	30	5	5	1	1 1/4	Bandelet
6	1,050	30	6	6	1 1/4	1 1/2	Bandoline
7	1,400	25	5	5	1	1 1/4	Bandrol
8	2,000	20	6	6	1 1/4	1 1/2	Bang
8	2,000	25	7	7	1 1/2	2	Banging
8	2,000	30	8	8	1 1/2	2 1/2	Banister
10	3,000	10	6	6	1 1/4	1 1/2	Banner
10	3,000	15	7	7	1 1/2	2	Barnacle
10	3,000	20	8	8	1 1/2	2 1/2	Baseboard
10	3,000	25	9	9	2	3	Basemod
10	3,000	30	10	10	2 1/2	3	Basquets
10 1/2	3,000	40	12	10	2 1/2	3	Bathed
12	4,200	20	9	9	2	3	Beandt
12	4,200	25	10	10	2 1/2	3	Beardless
12	4,200	30	12	10	2 1/2	3	Bearhog
12 1/2	4,200	40	14	12	3	3 1/2	Bearson
15	7,000	30	14	14	3	4	Beefers
15*	7,000	22	12	10	2 1/2	3	Beiegh
18	10,000	30	15	16	4	5	Beforegh
18*	10,000	20	12	12	3	3 1/2	Begemot
20	12,000	20	14	14	3	4	Belteof

*Low Lift Pumps.

†Special High Lift Pumps.

Price upon application.

Goulds Steam Sand and Dredging Pumps

Fig. 1343. Dredging Steam Pump with Single Engine, is furnished complete with suction and discharge elbows, flap valve and ejector for priming. The Pump shell is in one casting, very heavy, with extra metal provided in such parts that are most subject to wear. A removable disc is fitted to suction side of shell, which gives easy access to the inside of the Pump or for removal of piston. Stuffing box bearing is adjustable for wear and is fitted with water injection to keep sand out of bearing. The Pump is balanced for end thrust.



Fig. 1343

For Foot Valve, Flap Valves, Ejectors, etc., see page 169.

Fig. 1343. Sizes, Etc.

No. Pump Diameter Discharge Opening	Suitable for Elevations in Feet up to	Description of Engines	Size of Steam Cylinders		Size Steam Pipe	Size Exhaust Pipe	Shipping Weight	Cipher
			Diameter	Stroke				
4	15	Single	6	6	1 1/2-in.	1 1/2-in.	1,400	Artful
4	25	Double	4	4	1 1/4 "	1 1/2 "	2,100	Askano
6	20	Single	7	7	1 1/2 "	2 "	3,000	Askewol
6	27	Double	5	5	1 1/2 "	2 "	3,800	Aslakerd
8	25	Single	8	8	1 1/2 "	2 1/2 "	4,800	Aslekoh
8	30	Double	7	7	2 1/2 "	3 "	6,200	Aslagon
10	25	Single	10	10	2 1/2 "	3 "	6,500	Asoaked
10	30	Single	12	10	2 1/2 "	3 "	11,000	Aspron
10	35	Single	12	12	3 "	3 1/2 "	14,000	Aspectus
10	30	Double	8	8	2 1/2 "	3 "	7,500	Aspire
10	38	Double	9	9	3 "	4 1/2 "	12,200	Auditor
10	55	Double	12	10	3 "	4 1/2 "	16,000	Aversion
12	25	Single	12	12	3 "	3 1/2 "	10,500	Awake
12	30	Single	14	14	3 "	4 "	13,000	Awlse
12	38	Double	9	9	3 "	4 1/2 "	12,000	Awnless
12	45	Double	12	10	3 1/2 "	5 "	17,000	Axial
12	70	Double	14	12	5 "	6 "	21,000	Badge
15	35	Double	12	12	4 "	5 "	24,000	Bailed
18	35	Double	14	12	5 "	6 "	26,000	Baked

Price upon application.

Goulds "Pyramid" Double-Acting Piston Pump

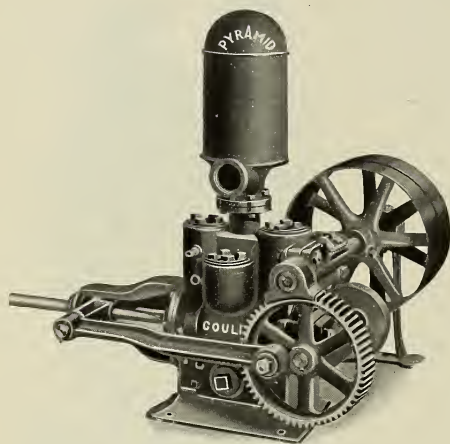


Fig. 1329

Fig. 1329—"Pyramid" Power Force Pump, combines ample power and large capacity in a most compact form. Its overall dimensions are smaller than those of any similar Pump of same capacity and strength.

The shaft bearings are not on the cylinder head, thus avoiding undue strain and tendency to leak at this point. Cylinder is brass-lined. Piston is cup-leather packed. Rubber disc valves on brass valve seats. Piston and valves easily accessible without disturbing pipe connections. Suction can be taken from either side. Discharge can be turned in four directions. We list four sizes, but will add other sizes as occasion requires.

This Pump is especially adapted to meet the requirements of a medium priced compact Power Pump to be operated by gas and gasoline engines or other belt power.

Fig. 1329. Sizes, Capacities, Prices, Etc.

PISTONS		Capacity One Rev. of Crank Shaft	Usual Speed and Capacity per Minute		For Elevation to	SIZE OF PIPE		Geared	Tight and Loose Pulleys	BRASS-LINED CYLINDER	
Diameter	Stroke					Suction	Discharge			Cipher	Price
3 in.	5 in.	.31 gal.	40 revs.,	12.4 gals.	125 feet	1½ in.	1¼ in.	5 to 1	15x2½ in.	Warrigh	\$55.00
4 "	5 "	.54 "	40 "	21.6 "	125 "	1½ "	1½ "	5 to 1	15x3 "	Warrid	65.00
5 "	5 "	.85 "	40 "	34.0 "	125 "	2 "	2 "	5 to 1	16x3½ "	Woomaw	73.00
6 "	5 "	1.22 "	40 "	48. "	125 "	2½ "	2½ "	5 to 1	16x4 "	Wordish	85.00

Goulds "Challenge" Double-Acting Piston Pump

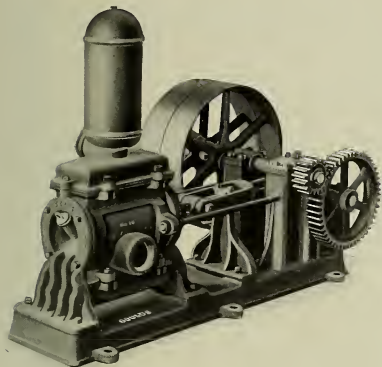


Fig. 824 1/2. Size 6" x 5"

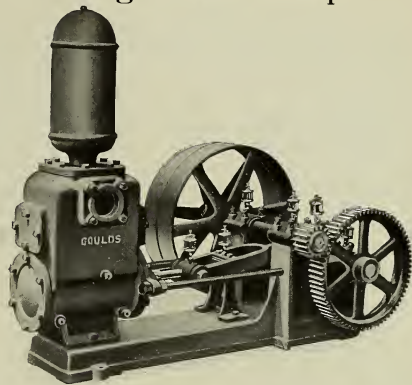


Fig. 824 1/2. Size 7" x 6"

Fig. 824 1/2—"Challenge" Double-Acting Power Pump, is adapted for light work, such as filling tanks, circulating brine, maintaining vacuum, etc. A substantial bed-plate extends the whole length of the Pump, affording a rigid support and permanent alignment for the working parts and cylinder. All pumps have machine-cut gears, tight and loose pulleys babbitted bearings, sight-feed oil cups; piston, cupped-leather packed; brass valve seats, brass glands and brass-cased piston rod. The 2 1/2 inch, 3 inch and 4 inch Pumps have brass valves ground to seats. Five, six, seven and eight-inch Pumps have rubber disc valves on bronze grid seats. Fibrous or metallic-spring packed pistons to order, at extra price.

Above is given detail of our standard construction. When so ordered, we modify their construction to suit particular requirements.

Fig. 824 1/2. Sizes, Capacities, Prices, Etc.

PISTON		Capacity One Rev. of Crank Shaft	Usual Speed and Capacity per Minute	For Eleva- tion to	SIZES OF PIPE		Geared	Tight and Loose Pulleys	BRASS-LINED CYLINDER		BRASS CYLINDER		*ALL BRASS	
Dia.	Stroke				Suction	Dis.			Cipher	Price	Cipher	Price	Cipher	Price
2 1/2 in.	4 1/2 in.	.20 gals.	40 revs., 8.0 gals.	150 ft.	1 1/4 in.	1 in.	4 to 1	20x3 in.	Zoste	\$85.00	Ridema	\$115.00	Rigust	\$150.00
3 "	4 1/2 "	.27 "	40 " 10.8 "	150 "	1 1/4 "	1 1/4 "	4 to 1	20x3 "	Zostera	90.00	Riguls	120.00	Rigute	155.00
4 "	4 1/2 "	.50 "	40 " 20.0 "	100 "	1 1/2 "	1 1/4 "	4 to 1	20x3 "	Zouave	95.00	Rigumd	130.00	Riguvo	170.00
5 "	5 "	.85 "	40 " 34.0 "	100 "	2 "	1 1/2 "	3 to 1	20x4 "	Zound	125.00	Rigunl	175.00	Rihads	260.00
6 "	5 "	1.22 "	40 " 48.8 "	100 "	2 1/2 "	2 "	3 to 1	20x4 "	Zuche	150.00	Riguop	220.00	Rineml	320.00
7 "	6 "	2.00 "	40 " 80.0 "	100 "	3 "	3 "	4 to 1	24x4 "	Zynat	250.00	Rigupa	425.00	Rintal	550.00
8 "	6 "	2.60 "	40 " 104.0 "	100 "	4 "	4 "	4 to 1	24x4 "	Zyned	300.00	Rigurl	500.00	Rintet	650.00

*All-brass Pumps have all parts of brass, except the bed-plate and driving parts.

Pumps and Pumping

Delivering water or other fluids against a head or resistance requires power. The simple change of position from one point to another is the theoretical, useful and effective power in pumping operations; in addition to this, power is required to overcome the fluid friction in the pipes and Pump, the mechanical friction of the Pump, and the way the fluid is moved,—whether pumped by the easy curves of the Efficient Triplex Power Pump or by the jerky corners of other Power Pump types.

Efficiency is the proportion this theoretical power bears to the whole amount of power expended and is, therefore, a factor of prime importance in the economy of the Pump installation. Goulds Efficient Triplex Power Pump by its continuous and uniform action upon the fluid being pumped and by its superior mechanical excellence performs the work of pumping in the most Efficient and Economical manner possible.

With the type and make of Pump in mind, the next step is the source and application of power for driving this Efficient Triplex Power Pump. In the mill and factory it is generally driven by belt from the line shafting and, when beyond the reach of such power, the Pump is driven by Electric Motor, by Gas or Gasoline Engine, or by Separate Steam Engine. Approved methods of applying power are illustrated and described on pages 218 to 226. These exemplify great numbers of installations that we have made and are entirely satisfactory and reliable in use.

The full measure of Efficiency in pumping depends upon the economy of the motive power. Water power is the cheapest of all. Steam Engines of economical type use about $1\frac{1}{2}$ pounds of coal per horse power hour, and grade from this to 5 pounds or more for small engines of plain type. Gas and Gasoline Engines are highly economical. Electric pumping is particularly convenient and often more economical than other power.

The direct-acting steam Pumps, both duplex and single, have been extensively used and served a useful purpose where conditions were crude and where rapid development was more essential than economy. They are necessarily extravagant in the use of fuel, even when in best condition, and are liable to great losses by being used with leaky steam valves and pistons. Careful tests under favorable conditions do not show good and economical results, and their use cannot be tolerated by the Manager striving to attain maximum earning power for his plant. Their use is fairly contrasted with the Efficient Triplex Power Pump in the following tabulated data:

Comparative Cost of Pumping

- Efficient Triplex Power Pump and Steam Engine, $1\frac{1}{2}$ to 5 lbs. of coal per horse power hour.
- Efficient Triplex Power Pump and Gasoline Engine, 1 pint of gasoline per horse power hour.
- Efficient Triplex Power Pump and Gas Engine, 10 to 20 cubic feet of gas per horse power hour.
- Efficient Triplex Power Pump and Electric Motor, $1\frac{1}{2}$ to 4c per 1,000 Watt Hours or $1\frac{1}{8}$ to 3c per horse power hour.
- Small Steam Pumps, about 25 lbs. of coal per horse power hour.
- Larger Steam Pumps, Compounded, about 13 lbs. of coal per horse power hour.
- Pulsometers, about 67 lbs. of coal per horse power hour.
- Injectors and Inspirators, about 100 lbs. of coal per horse power hour.

Table of Power Required to Operate Goulds Efficient Triplex Pumps

The estimates given in the table are made with a liberal allowance of power. The power for other capacities and heights is, approximately, in proportion to that tabulated. Closer estimates will be given upon application. By "head" is meant the vertical distance from surface of water supply to point of delivery. One foot head is equivalent to .43 pounds pressure. The head is increased by the friction of the water in the pipes and elbows.

General Service Pumps

	Diameter and Stroke of Pump	Usual Capacity per Minute	50 Feet Head or 21 Pounds Pressure	100 Feet Head or 43 Pounds Pressure	150 Feet Head or 65 Pounds Pressure	200 Feet Head or 87 Pounds Pressure	250 Feet Head or 108 Pounds Pressure	300 Feet Head or 130 Pounds Pressure	350 Feet Head or 150 Pounds Pressure
		1.8 gals.	.50 h. p.	.50 h. p.	.50 h. p.	.70 h. p.	.50 h. p.	.50 h. p.	.55 h. p.
Single Acting	1½ x 2 in.	4.2	.50	.50	.65	.70	.85	.90	1.12
	1½ x 2½	6	.50	.50	.79	1.05	1.20	1.33	1.61
	2 x 3	12	.60	1.0	1.36	1.80	2.15	2.33	2.83
	2½ x 4	18	.75	1.1	1.6	2.0	2.5	2.9	3.15
	3 x 4	25	.83	1.3	1.8	2.25	2.7	3.1	3.25
	3½ x 4	32	1.2	1.5	2.0	2.40	3.0	3.7	4.0
	4 x 4	50	1.9	2.5	3.1	3.75	4.8	5.6	6.25
	4 x 6	75	2.5	3.5	4.0	6.25	7.5	8.75	9.5
	5 x 6	90	2.50	4.0	5.0	6.0	9.0	10.5	11.2
	6 x 8	132	3.6	4.5	7.0	8.7	11.0	13.0	15.5
	6½ x 8	153	4.25	6.0	8.0	10.0	12.75	15.0	17.8
	7 x 8	180	5.0	7.0	9.5	12.0	15.0	18.0	21.0
	7 x 10	210	5.25	7.8	10.75	13.5	17.25	21.0	23.33
	8 x 8	234	5.85	9.0	12.0	15.0	19.5	23.5	26.0
	8 x 10	273	7.0	10.5	15.0	18.25	22.75	26.0	30.0
	8 x 12	312	8.25	12.0	17.0	22.0	26.0	30.0	34.0
	9 x 10	344	8.50	13.0	18.0	23.0	28.0	33.0	37.5
	10 x 10	426	10.6	16.2	22.5	28.7	35.0	41.1	46.8
	11 x 10	516	12.7	19.5	27.0	34.5	42.0	49.5	56.2
	12 x 10	617	15.3	23.4	32.4	41.0	50.4	59.4	67.5
Double Acting	8½ x 12	352	8.50	13.0	19.0	23.5	28.0	33.0	38.0
	9 x 12	396	9.5	15.6	21.3	26.3	31.3	36.9	42.5
	10 x 12	488	11.1	19.0	26.0	33.0	40.3	46.0	53.0
	11 x 12	592	13.5	23.0	32.0	40.0	48.25	56.0	64.75
	12 x 12	704	16.0	28.0	38.0	47.5	57.75	68.0	76.5
	12 x 14	779	17.6	30.8	41.8	52.25	63.32	74.8	84.1
	13 x 12	826	17.0	34.7	44.5	55.6	67.5	79.5	89.5
	14 x 12	958	21.7	38.0	51.6	64.6	78.5	92.5	104.0
	15 x 12	1100	24.9	43.6	59.2	74.1	90.0	106.0	119.0
	12 x 16	846	19.0	33.0	45.0	56.0	69.0	81.5	93.0
	13 x 16	990	23.0	40.0	54.0	68.0	82.5	97.0	107.0
	14 x 16	1152	26.5	44.7	62.0	77.6	93.0	109.0	127.0
	15 x 16	1321	30.5	51.5	71.3	89.0	107.0	125.0	146.0
	4 x 6	94	2.4	3.9	5.2	6.3	7.5	8.8	10.1
	4½ x 8	140	3.5	5.9	7.8	9.4	11.2	13.2	15.2
	5 x 8	175	4.4	7.3	9.75	11.7	14.0	16.4	19.0
	5½ x 8	211	5.3	8.7	11.7	14.0	17.0	19.7	22.8
	6 x 8	252	5.75	10.2	13.5	16.8	20.0	23.5	27.0
	6½ x 8	297	6.75	12.0	16.0	19.7	23.5	27.6	31.7
	7 x 8	346	8.50	13.0	18.0	23.0	28.0	32.0	37.0
	7 x 10	411	9.35	15.7	21.5	27.0	32.5	38.0	44.0
	8 x 10	533	12.00	20.0	27.0	34.0	42.0	50.0	58.0
	8 x 12	612	14.0	24.0	33.0	41.6	50.0	59.5	68.0
	8½ x 12	684	15.7	26.5	36.7	46.0	55.0	64.3	75.0
	9 x 12	776	18.00	29.8	40.0	51.7	62.0	72.7	84.0
	10 x 12	952	21.5	36.6	50.0	63.4	76.0	89.2	103.0
	11 x 12	1164	26.0	44.7	62.0	77.6	93.0	109.1	127.0
	12 x 12	1368	31.5	53.0	73.5	91.6	110.0	130.7	150.0
	11 x 14	1276	29.0	49.0	67.0	85.0	103.0	120.0	140.0
	12 x 14	1531	35.0	58.0	80.0	101.0	122.0	143.0	166.0
	10 x 16	1170	26.7	44.3	61.1	77.1	93.2	109.0	126.0
	12 x 16	1700	38.5	64.0	88.0	111.0	134.0	157.0	183.0
	14 x 16	2117	43.75	80.0	110.0	140.0	170.0	200.0	233.0

Goulds Single-Acting Triplex Plunger Pump

200 Pounds
Pressure

460 Feet
Elevation

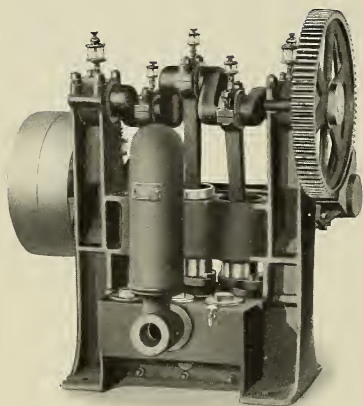


Fig. 1157. Size 3" x 4"
Type of the 3" x 4" and smaller sizes

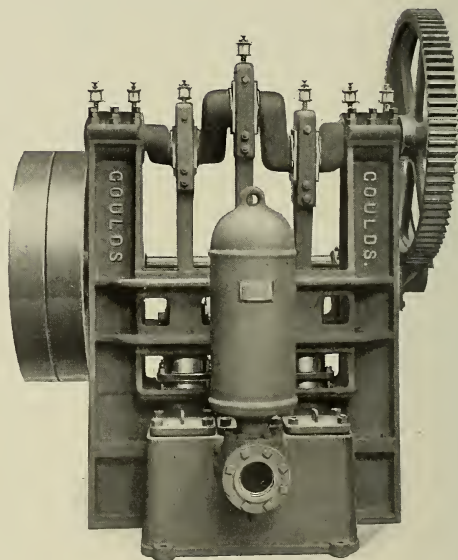


Fig. 1157. Size 7" x 10"
Type of the 3½" x 6" and larger sizes

Specification

Fig. 1157—Single-Acting Triplex Plunger Pump for 200 pounds working pressure or 460 feet elevation.—General Water Supply, Municipal Water Works, Boiler Feeding, Hydraulic Elevators, Mine Pumping, etc.

Crank Shaft	Steel casting (Open Hearth).
Bearings	The crank shaft and pinion shaft bearings are of babbitt metal.
Gearing	The gear and pinion are made of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Sizes $3\frac{1}{2} \times 6$ in. and larger are fitted with adjustable bronze shoes which run in bored guides. On sizes 3×4 in. and smaller, the crossheads are cylindrical in form, made of bronze and run in bored guides.
Connecting Rods	Sizes $3\frac{1}{2} \times 6$ in. and larger have bronze boxes with strap head and wedge adjustment at crank end, and adjustable bronze boxes, marine type, at crosshead end. Sizes 3×4 in. and smaller have adjustable boxes babbitted at crank end, and bronze bushing at plunger end.
Cylinders	Close grained iron cast in one piece with standards. This forms exceptionally rigid construction and assures accurate alignment of all working parts.
Plungers	Hard cast iron, except size $1\frac{1}{2} \times 3$ in., which has bronze plungers.
Glands	Are iron, except size $1\frac{1}{2} \times 3$ in., which has bronze glands.
Base and Valve Boxes	Charcoal iron, in one casting, of liberal proportion, affording large valve area, direct water ways and easy access.
Valves	Valves are made to suit requirements. For hot water we advise metal valves, but can furnish hard rubber, if ordered.
Special Construction	Phosphor Bronze Plungers, lined Cylinders and Glands, Rawhide Pinions, etc., to order at extra price.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

For Boiler Feed Tables and Piping, see page 224.

For Table of Power required to operate, see page 181.

Fig. 1157. Sizes, Capacities, Etc.

PLUNGERS		Capacity one Revolution of Crank Shaft	Usual Speed and Capacity per Minute	SIZES OF PIPE		Geared	Tight and Loose Pulleys	Cipher
Diameter	Stroke			Suction	Discharge			
$1\frac{1}{2}$ in.	3 in.	.07 gal.	50 revs., 3.5 gals.	$1\frac{1}{4}$ in.	$1\frac{1}{4}$ in.	5 to 1	$12 \times 2\frac{1}{2}$ in.	Rusehis
2 "	4 "	.16 "	50 " 8. "	$1\frac{1}{2}$ "	$1\frac{1}{2}$ "	5 to 1	15×3 "	Saploa
3 "	4 "	.36 "	50 " 18. "	2 "	2 "	5 to 1	15×3 "	Sapluer
$3\frac{1}{2}$ "	6 "	.74 "	50 " 37. "	2 "	2 "	5 to 1	20×3 "	Tobem
4 "	8 "	1.3 "	45 " 58. "	3 "	3 "	5 to 1	30×5 "	Tobens
5 "	8 "	2.0 "	45 " 90. "	4 "	4 "	5 to 1	30×6 "	Tobepo
6 "	8 "	2.9 "	45 " 130. "	4 "	4 "	5 to 1	36×6 "	Toberd
7 "	10 "	5.0 "	42 " 210. "	5 "	5 "	5 to 1	42×6 "	Tobest

Goulds Single-Acting Triplex Plunger Pump

150 Pounds
Pressure

350 Feet
Elevation

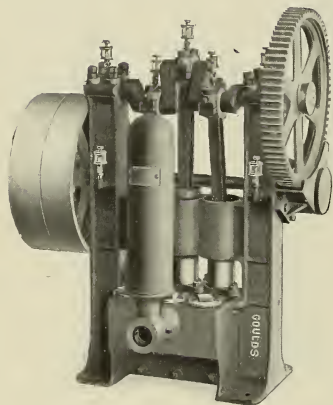


Fig. 1009. Size $2\frac{1}{2}$ " x 4"
Type of the $3\frac{1}{2}$ " x 4"
and smaller sizes

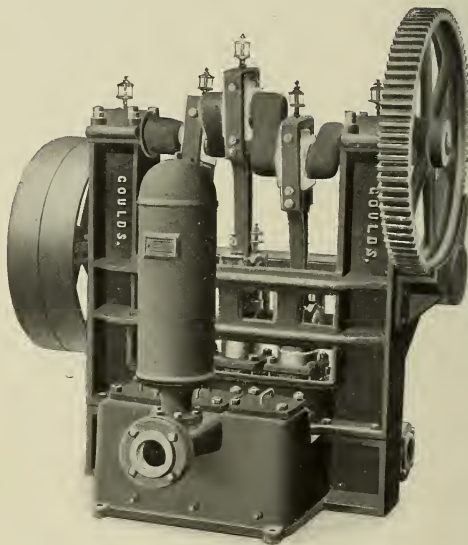


Fig. 1009. Size 7" x 8"
Type of the 4" x 6"
and larger sizes

Specification

Fig. 1009—Single-Acting Triplex Plunger Pump, for 150 pounds working pressure or 350 feet elevation.—General Water Supply, Municipal Water Works, Boiler Feeding, Hydraulic Elevators, Mine Pumping, etc.

Crank Shaft	Steel casting (Open Hearth).
Bearings	The crank shaft and pinion shaft bearings are of babbit metal.
Gearing	The gear and pinion are made of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Sizes 4 x 6 in. and larger are fitted with adjustable bronze shoes which run in bored guides. On sizes 3½ x 4 in. and smaller the crossheads are cylindrical in form, made of bronze and run in bored guides.
Connecting Rods	Sizes 4 x 6 in. and larger have bronze boxes with strap head and wedge adjustment at crank end and adjustable bronze boxes, marine type, at crosshead end. Sizes 3½ x 4 in. and smaller have adjustable boxes babbitted at crank end and bronze bushing at plunger end.
Cylinders	Close grained iron cast in one piece with standards. This forms exceptionally rigid construction and assures accurate alignment of all working parts.
Plungers	Sizes 2½ x 4 in. and larger are fitted with hard cast iron plungers. Sizes 2 x 3 in. and smaller have bronze plungers.
Glands	Sizes 2½ x 4 in. and larger have iron glands. Sizes 2 x 3 in. and smaller have bronze glands.
Base and Valve Boxes	Charcoal iron, in one casting, of liberal proportion, affording large valve area, direct water ways and easy access.
Valves	Rubber discs on bronze seats and have cylindrically wound springs. Metal Valves to order.
Special Construction	Phosphor Bronze Plungers, Lined Cylinders and Glands, Rawhide Pinions, etc., to order at extra price.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

For Boiler Feed Tables and Piping, see page 224.

For Table of Power required to operate, see page 181.

Fig. 1009. Sizes, Capacities, Etc.

PLUNGERS		Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	SIZES OF PIPE		Geared	Tight and Loose Pulleys	Cipher
Diameter	Stroke			Suction	Discharge			
1¼ in.	2 in.	0.03 gals.	60 revs., 1.8 gals.	¾ in.	¾ in.	5 to 1	12 x 1½ in.	Crag
1¾ " "	2½ " "	0.07 " "	60 " 4.2 " "	1 " "	1 " "	5 to 1	12 x 2½ " "	Craggy
2 " "	3 " "	0.12 " "	50 " 6. " "	1¼ " "	1¼ " "	5 to 1	12 x 2½ " "	Crachom
2½ " "	4 " "	0.25 " "	50 " 12. " "	1½ " "	1½ " "	5 to 1	15 x 3 " "	Cragify
3½ " "	4 " "	0.5 " "	50 " 25. " "	2 " "	2 " "	5 to 1	15 x 3 " "	Craftul
4 " "	6 " "	1.0 " "	50 " 50. " "	2 " "	2 " "	5 to 1	20 x 3 " "	Crajum
5 " "	6 " "	1.5 " "	50 " 75. " "	3 " "	3 " "	5 to 1	26 x 4 " "	Crajyx
5 " "	8 " "	2.0 " "	45 " 90. " "	3 " "	3 " "	5 to 1	30 x 5 " "	Crakal
6 " "	8 " "	2.93 " "	45 " 132. " "	4 " "	4 " "	5 to 1	30 x 6 " "	Cusick
7 " "	8 " "	4.0 " "	45 " 180. " "	4 " "	4 " "	5 to 1	36 x 6 " "	Cusjoe
8 " "	10 " "	6.5 " "	42 " 273. " "	5 " "	5 " "	5 to 1	42 x 6 " "	Cuskus

Goulds Single-Acting Triplex Plunger Pump

130 Pounds
Pressure

300 Feet
Elevation

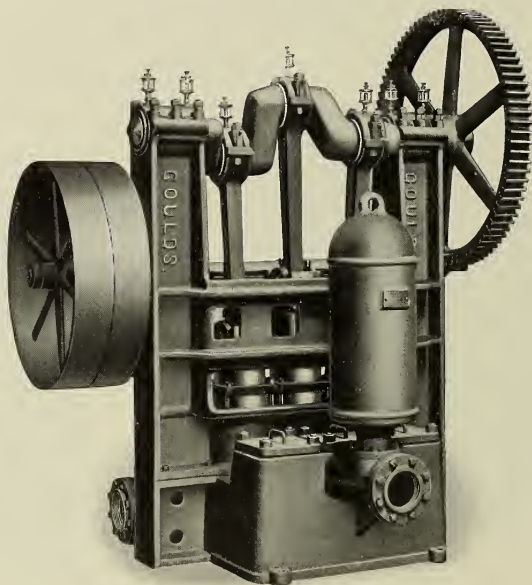


Fig. 1140. Size 8" x 10"

Specification

Fig. 1140—Single-Acting Triplex Plunger Pump, for 130 lbs. working pressure or 300 feet elevation.—General Water Supply, Municipal Water Works, Boiler Feeding, Hydraulic Elevators, Mine Pumping, Pulp Grinders, etc.

Crank Shaft	Steel casting (Open Hearth).
Bearings	The crank shaft and pinion shaft bearings are of babbit metal.
Gearing	The gear and pinion are made of charcoal iron, machine cut. The gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Have babbitted shoes which run in bored guides.
Connecting Rods	Have adjustable bronze boxes at crank end and bronze bushing at crosshead end.
Cylinders	Close grained iron cast in one piece with standards. This forms exceptionally rigid construction and assures accurate alignment of all working parts.
Plungers	Hard cast iron, turned and ground true and smooth.
Glands	Iron and of easy access for adjustment.
Base and Valve Boxes	Charcoal iron in one casting, of liberal proportion, affording large valve area, direct water ways and easy access.
Valves	Rubber discs on bronze grid seats and have cylindrically wound springs. Metal Valves to order.
Air Chambers	Supplied with Pumps. Vacuum Chambers to order at extra price.
Oil Cups	Furnished with all Pumps.
and Wrenches	
Special Construction	Phosphor Bronze Plungers, Lined Cylinders and Glands, Rawhide Pinions, etc., to order at extra price.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

For Boiler Feed Tables and Piping, see page 224.

For Table of Power required to operate, see page 181.

Fig. 1140. Sizes, Capacities, Etc.

PLUNGERS		Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	SIZES OF PIPE		Geared	Tight and Loose Pulleys	Cipher
Diameter	Stroke			Suction	Discharge			
4 in.	6 in.	1.0 gals.	50 revs., 50 gals.	2 in.	2 in.	5 to 1	20 x 3 in.	Tobeul
5 "	8 "	2.0 "	45 " 90 "	3 "	3 "	5 to 1	30 x 5 "	Tobevy
6 "	8 "	2.9 "	45 " 130 "	4 "	4 "	5 to 1	30 x 6 "	Tobewx
7 "	8 "	4.0 "	45 " 180 "	4 "	4 "	5 to 1	30 x 6 "	Tobid
8 "	10 "	6.5 "	42 " 273 "	5 "	5 "	5 to 1	36 x 6 "	Tobick

Goulds Single-Acting Triplex Plunger Pump

130 Pounds
Pressure

300 Feet
Elevation

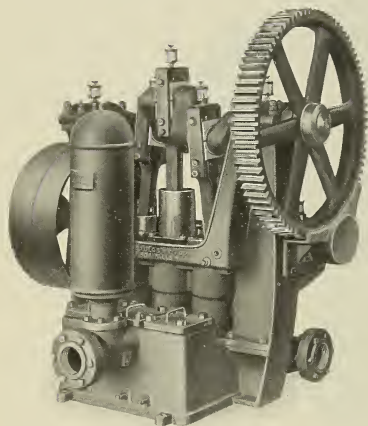


Fig. 924. Size 6½" x 8"
Type of 4" x 4" to 6½" x 8" sizes

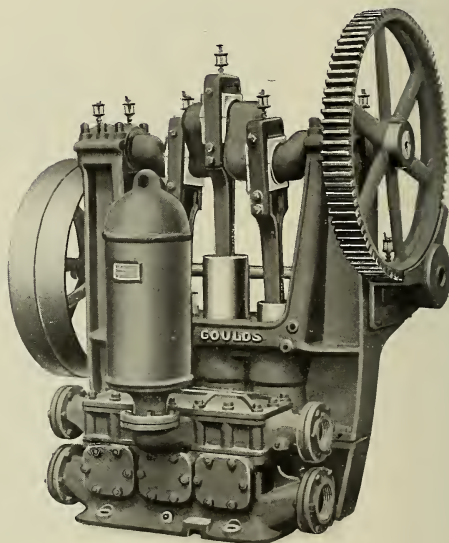


Fig. 924. Size 8" x 10"
Type of 8" x 8" and larger sizes

Specification

Fig. 924—Single-Acting Triplex Plunger Pump, for 130 pounds pressure or 300 feet elevation.—General Water Supply, Municipal Water Works, Hydraulic Elevators, Pulp Grinders, Railway Water Stations, etc.

Crank Shaft	Steel casting (Open Hearth).
Bearings	The crank shaft and pinion shaft bearings are of babbit metal.
Gearing	The gear and pinion are made of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Connecting Rods	Are of unusual length; sizes 4 x 4 in. and larger have bronze boxes with strap head and wedge adjustment at crank end and bronze bushing at plunger end. Sizes 2½ x 4 in. and 3 x 4 in. have adjustable boxes babbitted at crank end and bronze bushing at plunger end.
Cylinders	Close grained iron cast in one piece with standards. This forms exceptionally rigid construction and assures accurate alignment of all working parts.
Plungers	Hard cast iron turned and ground true and smooth.
Glands	Iron and of easy access for adjustment.
Base and Valve Boxes	Charcoal iron in one casting, of liberal proportion, affording large valve area, direct water ways and easy access.
Valves	Rubber discs on bronze grid seats and have cylindrically wound springs. Metal Valves to order.
Air Chambers	Supplied with Pumps. Vacuum Chambers to order at extra price.
Oil Cups and Wrenches	Furnished with all Pumps.
Special Construction	Phosphor Bronze Plungers, Lined Cylinders and Glands, to order at extra price.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

For Boiler Feed Tables and Piping, see page 224.

For Table of Power required to operate, see page 181.

Fig. 924. Sizes, Capacities, Etc.

PLUNGERS		Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	SIZES OF PIPE		Geared	Tight and Loose Pulleys	Cipher
Diameter	Stroke			Suction	Discharge			
2½ in.	4 in.	0.25 gal.	50 revs., 12 gals.	1½ in.	1½ in.	5 to 1	15 x 3 in.	Wench
3 "	4 "	0.30 "	50 " 18 "	1½ "	1½ "	5 to 1	15 x 3 "	Wend
4 "	4 "	0.65 "	50 " 32 "	2 "	2 "	5 to 1	20 x 3 "	Wenel
4 "	6 "	1.0 "	50 " 50 "	2 "	2 "	5 to 1	20 x 3 "	Wenta
5 "	6 "	1.5 "	50 " 75 "	3 "	3 "	5 to 1	26 x 4 "	Weraba
5 "	8 "	2.0 "	45 " 90 "	3 "	3 "	5 to 1	30 x 5 "	Werste
6½ "	8 "	3.4 "	45 " 153 "	4 "	4 "	5 to 1	30 x 6 "	Wooring
8 "	8 "	5.2 "	45 " 234 "	5 "	4 "	5 to 1	36 x 6 "	Werste
8 "	10 "	6.5 "	42 " 273 "	5 "	4 "	5 to 1	42 x 6 "	Zylode
9 "	10 "	8.2 "	42 " 344 "	6 "	5 "	6 to 1	42 x 8 "	Zylom

Goulds Single-Acting Triplex Plunger Pump

43 Pounds
Pressure

100 Feet
Elevation

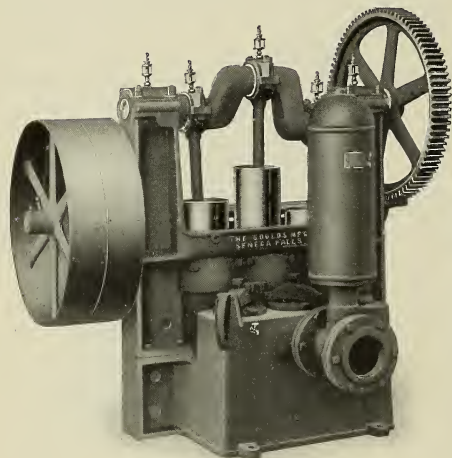


Fig. 957. Size 7" x 8"
Type of 7" x 8" and smaller sizes

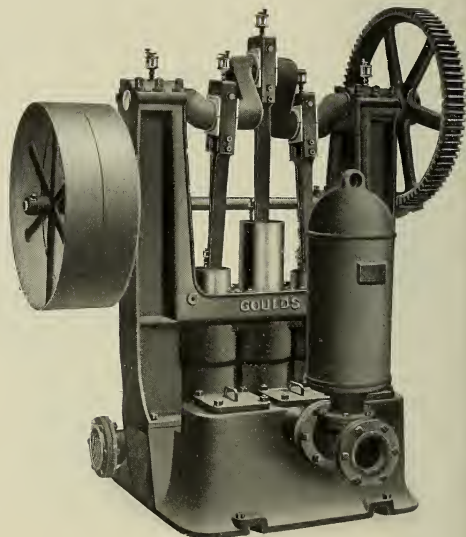


Fig. 957. Size 8" x 12"
Type of 8" x 10" and 8 x 12

Specification

Fig. 957—Single-Acting Triplex Plunger Pump, for 43 pounds working pressure or 100 feet elevation.—Tank Pumping in Mills, Bleacheries, Dye Houses, Tanneries, Railway Stations, Refineries, etc.

Crank Shaft	Steel casting (Open Hearth).
Bearings	The crank shaft and pinion shaft bearings are of babbitt metal.
Gearing	The gear and pinion are made of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Connecting Rods	Are of unusual length; sizes 8 x 10 in. and larger have bronze boxes with strap head and wedge adjustment at crank end and bronze bushing at plunger end. Sizes 7 x 8 in. and smaller have adjustable bronze boxes at crank end and bronze bushing at plunger end.
Cylinders	Close grained iron cast in one piece with standards. This forms exceptionally rigid construction and assures accurate alignment of all working parts.
Plungers	Hard cast iron, turned and ground true and smooth.
Glands	Iron and of easy access for adjustment.
Base and Valve Boxes	Charcoal iron in one casting of liberal proportion, affording large area, direct water ways and easy access
Valves	Rubber discs on bronze grid seats and have cylindrically wound springs. Metal Valves to order.
Air Chambers	Supplied with Pumps. Vacuum Chambers to order at extra price.
Oil Cups and Wrenches	Furnished with all Pumps.
Special Construction	Phosphor Bronze Plungers, Lined Cylinders and Glands, to order at extra price.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

For Table of Power required to operate, see page 181.

Fig. 957. Sizes, Capacities, Etc.

PLUNGERS		Capacity one Revolution of Crank Shaft	Usual Speed and Capacity per Minute		SIZES OF PIPE		Geared	Tight and Loose Pulleys	Cipher
Diameter	Stroke				Suction	Discharge			
4 in.	6 in.	1.0 gals.	50 revs.,	50 gals.	2 in.	2 in.	5 to 1	20 x 3 in.	Wraivj
5 "	8 "	2.0 "	45 "	90 "	3 "	3 "	5 to 1	26 x 4 "	Wraivl
7 "	8 "	4.0 "	45 "	180 "	5 "	5 "	5 to 1	30 x 5 "	Writnes
8 "	10 "	6.5 "	42 "	273 "	6 "	5 "	5 to 1	36 x 6 "	Writin
8 "	12 "	7.8 "	40 "	312 "	6 "	5 "	5 to 1	36 x 6 "	Wroken

Goulds Single-Acting Triplex Plunger Pump

100 to 1500
Pounds Pressure

230 to 3500
Feet Elevation

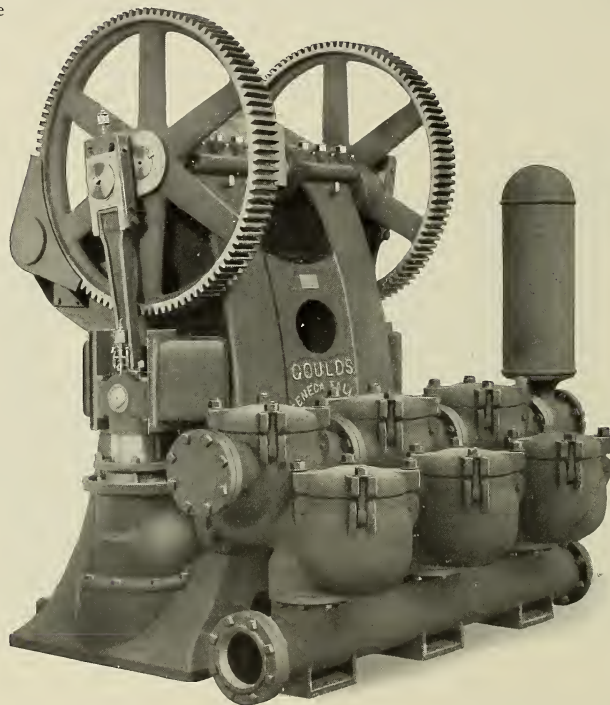


Fig. 1283, Type 9" x 12" and Smaller Sizes

Specification

Fig. 1283. SINGLE ACTING TRIPLEX PLUNGER PUMP, for 100 to 1500 pounds working pressure, or 230 to 3500 feet elevation, per table below.—General Water Supply, Municipal Water Works, Boiler Feeding, Hydraulic Elevators, Mine Pumping, etc.

Frame	Consists of two standards which carry the main bearings and the seats for the two outside cylinders and the seats to which the outside crosshead guides are bolted. These are held together by the center crosshead guide and the seat for the center cylinder.
Crank Shaft	Steel forging.
Bearings	The crank shaft bearings are phosphor bronze and pinion shaft bearings are of babbitt metal.
Gearing	Double gearing, charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Have adjustable bronze shoes which run in bored guides.
Connecting Rods	Have bronze boxes with strap head and wedge adjustment at crank end and adjustable bronze boxes, marine type, at crosshead end.
Cylinders	Separate charcoal iron castings, bronze lined.
Plungers	Hard cast iron, turned and ground true and smooth.
Glands	Iron and easy of access for adjustment.
Valve Boxes	Separate charcoal iron castings, each containing a set of suction and discharge valves.
Valves	Are special to meet requirements.
Pipe Connections	At either end of Pump.
Oil Cups & Wrenches	Furnished with all Pumps.

Special Construction Phosphor Bronze Plungers, Bronze Lined Glands, Rawhide Pinions, etc., to order at extra price.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

For Boiler Feed Tables and Piping, see page 224.

For Table of Power required to operate, see page 181.

Fig. 1283. Sizes, Capacities, Etc.

PLUNGERS		Capacity one Revolution of Crank Shaft	Usual Speed and Capacity per Minute	For Working Pressure of	SIZES OF PIPE		Geared	*Pulley	Cipher
Diameter	Stroke				Suction	Discharge			
3¼ in.	12 in.	1.29 gals.	40 revs., 51 gals.	1500 lbs.	3 in.	3 in.	5.6 to 1	32x17 in.	Weireb
4¼ " "	12 " "	2.21 " "	40 " 88 " "	1000 " "	4 " "	4 " "	5.6 to 1	32x17 " "	Wedags
5½ " "	12 " "	3.7 " "	40 " 148 " "	585 " "	6 " "	6 " "	5.6 to 1	32x17 " "	Wedaida
6 " "	12 " "	4.4 " "	40 " 176 " "	475 " "	6 " "	6 " "	5.6 to 1	32x17 " "	Wedbab
7 " "	12 " "	6.0 " "	40 " 240 " "	350 " "	6 " "	6 " "	5.6 to 1	32x17 " "	Wedbec
8 " "	12 " "	7.8 " "	40 " 312 " "	260 " "	8 " "	7 " "	5.6 to 1	32x17 " "	Wedbfg
9 " "	12 " "	9.9 " "	40 " 396 " "	215 " "	8 " "	7 " "	5.6 to 1	32x17 " "	Wedbga
4½ " "	16 " "	3.3 " "	36 " 118 " "	1000 " "	6 " "	6 " "	5. to 1	38x20 " "	Wallho
5 " "	16 " "	4.08 " "	36 " 147 " "	800 " "	6 " "	6 " "	5. to 1	38x20 " "	Waller
6 " "	16 " "	5.8 " "	36 " 209 " "	550 " "	6 " "	6 " "	5. to 1	38x20 " "	Waltag
7 " "	16 " "	8. " "	36 " 288 " "	400 " "	6 " "	6 " "	5. to 1	38x20 " "	Walti
8 " "	16 " "	10.4 " "	36 " 374 " "	300 " "	8 " "	7 " "	5. to 1	38x20 " "	Waltka
9 " "	16 " "	13.2 " "	36 " 475 " "	250 " "	8 " "	7 " "	5. to 1	38x20 " "	Waltax
10 " "	16 " "	16.3 " "	36 " 586 " "	200 " "	10 " "	8 " "	5. to 1	38x20 " "	Waltstff
12 " "	16 " "	23.5 " "	36 " 846 " "	130 " "	12 " "	10 " "	5. to 1	38x20 " "	Waltsgl
14 " "	16 " "	32. " "	36 " 1152 " "	100 " "	12 " "	10 " "	5. to 1	38x20 " "	Waltsho

* Largest pulley that can be placed on shaft between pinions. If speed conditions require larger pulley the pinion shaft may be extended and supported by outboard bearing. See page 222.

Goulds Single-Acting Triplex Plunger Pump

110 to 300
Pounds Pressure

250 to 700
Feet Elevation

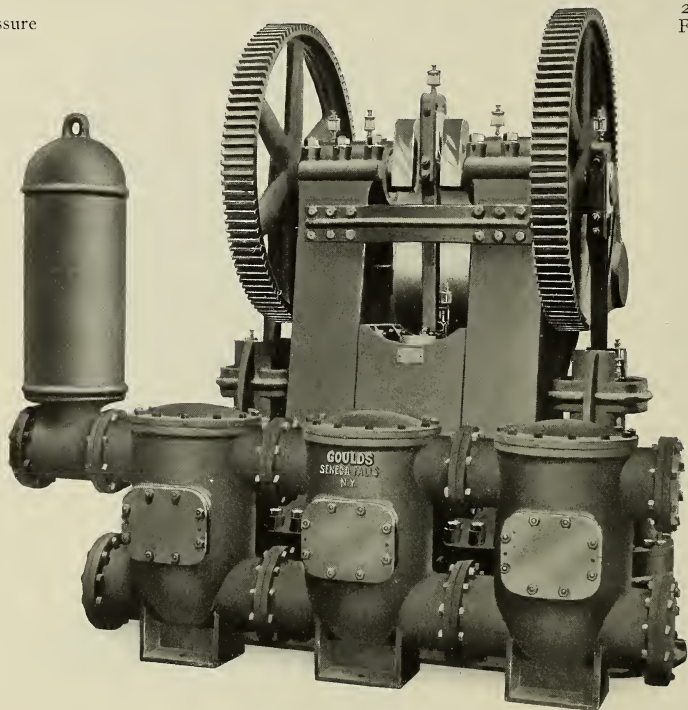


Fig. 920. Size 12" x 12"

Specification

Fig. 920—Single-Acting Triplex Plunger Pump, for 100 to 300 pounds working pressure or 250 to 700 feet elevation, per table below.—General Water Supply, Municipal Water Works, Boiler Feeding, Hydraulic Elevators, Pulp Grinders, Mine Pumping, etc.

Frame	Consists of two standards having center guide casting bolted between them and fastened to base, which forms a rigid foundation for working parts.
Crank Shaft	Steel forging.
Bearings	The crank shaft bearings are of phosphor bronze and pinion shaft bearings of babbitt metal.
Gearing	Pump is fitted with double gearing of charcoal iron, machine cut. The gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Have adjustable bronze shoes which run in bored guides.
Connecting Rods	Have bronze boxes with strap head and wedge adjustment at crank end and adjustable bronze boxes, marine type, at crosshead end.
Cylinders	Separate charcoal iron castings, bronze lined.
Plungers	Hard cast iron, turned and ground true and smooth.
Glands	Iron and of easy access for adjustment.
Valve Boxes	Separate charcoal iron castings, each containing a set of suction and discharge valves.
Valves	Rubber discs on bronze grid seats and have cylindrically wound springs. Metal Valves to order.
Pipe Connections	At either end of Pump.
Air Chambers	Supplied with Pumps. Vacuum Chambers to order at extra price.
Oil Cups	Furnished with all Pumps.
and Wrenches	
Special Construction	Phosphor Bronze Plungers, Bronze Lined Glands, Rawhide Pinions, etc., to order at extra price.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

For Table of Power required to operate, see page 181.

For Boiler Feed Tables, see page 224.

Fig. 920 Sizes, Capacities, Etc.

No.	PLUNGERS		Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	For Elevations to	SIZES OF PIPE		Geared	*Single Pulley	Cipher
	Diameter	Stroke				Suction	Discharge			
A	6 in.	12 in.	4.4 gals.	40 revs., 176 gals.	700 feet	6 in.	5 in.	5.6 to 1	30 x 12 in.	Wagael
B	7 " "	12 " "	6. " "	40 " 240 "	500 "	6 " "	5 " "	5.6 to 1	30 x 12 "	Wagaft
C	8 1/2 " "	12 " "	8.8 " "	40 " 352 "	350 "	7 " "	6 " "	5.6 to 1	30 x 12 "	Clecob
J	10 " "	12 " "	12.2 " "	40 " 488 "	350 "	8 " "	7 " "	5.6 to 1	32 x 16 "	Wooven
K	11 " "	12 " "	14.8 " "	40 " 592 "	300 "	10 " "	8 " "	5.6 to 1	32 x 16 "	Clubka
L	12 " "	12 " "	17.6 " "	40 " 704 "	250 "	10 " "	8 " "	5.6 to 1	32 x 16 "	Clubkih

*Largest pulley that can be placed between pinions on shaft. If speed conditions require larger pulley the pinion shaft may be extended and supported by outboard bearing. See page 222.

Goulds Single-Acting Triplex Plunger Pump

65 to 85
Pounds Pressure

150 to 200
Feet Elevation

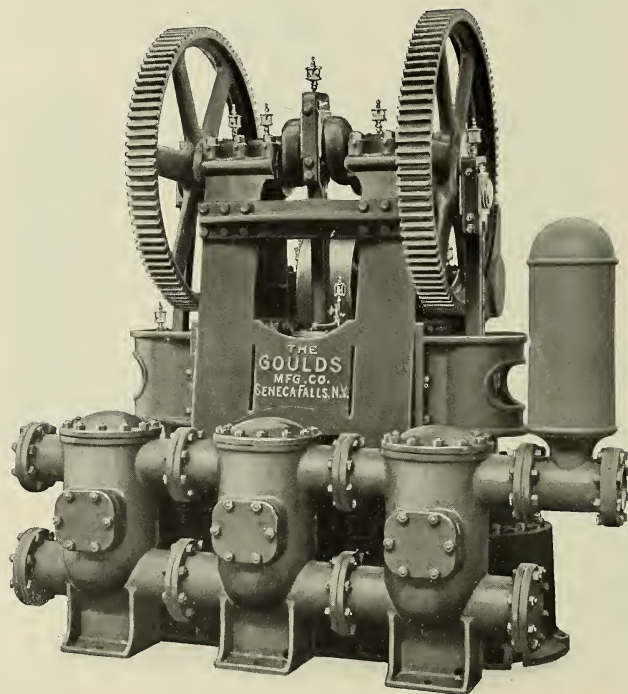


Fig. 1367. Size 12" x 12"

Specification

Fig. 1367—Single-Acting Triplex Plunger Pump, for 65 to 85 pounds working pressure or 150 to 200 feet elevation, per table below.—General Water Supply, Municipal Water Works, Condenser Service, etc., etc.

Base	The top is planed to receive the housings which are bolted and doweled to it in permanent alignment.
Housings	They are planed to receive the caps of the crank shaft bearings, and are then bored with caps in position for these bearings.
Crank Shaft and Bearings	The crank shaft is a high grade steel casting. The main bearings are best anti-friction metal.
Pinion Shaft and Bearings	The pinion shaft is steel, running in boxes lined with best anti-friction metal. The boxes rest upon brackets and are bolted to the housings.
Gearing	The gearing is double, the crank shaft carrying a gear at each end beyond the bearings.
Connecting Rods and Boxes	Each connecting rod, at the crank, has a bronze box with strap and taper adjustment, and at the crosshead pin, a bronze bearing of the marine type.
Crossheads and Guides	The crossheads have bronze shoes adjustable for taking up wear. The two end guides are bolted to standards and bored in perfect alignment.
Plungers	The plungers are hard cast iron finished true and smooth by grinding. The packings and glands are readily accessible.
Cylinder and Valve Chests	The cylinders and base are in one casting. The valve chests are each a separate casting, and each contains a set of suction and discharge valves.
Valves	The valves are rubber discs, on bronze grid seats, and have cylindrically wound springs.
Special Construction	Phosphor Bronze Pistons, Tobin Bronze Piston Rods, Rawhide Pinions, etc., special to order at extra price.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

For Table of Power required to operate, see page 181.

Fig. 1367. Sizes, Capacities, Etc.

PLUNGERS		Capacity one Revolution of Crank Shaft	Usual Speed and Capacity per Minute	For Elevations to	SIZES OF PIPE		Geared	Single Pulley	Cipher
Diameter	Stroke				Suction	Discharge			
10 in.	10 in.	10.2 gals.	42 revs., 428 gals.	200 feet	7 in.	6 in.	5.3 to 1	26 x 10 in.	Tribwa
11 "	10 "	12.3 "	42 " 516 "	175 "	8 "	7 "	5.3 to 1	26 x 10 "	Tribwbb
12 "	10 "	14.7 "	42 " 617 "	150 "	8 "	7 "	5.3 to 1	26 x 10 "	Tribwck
12 "	12 "	17.6 "	40 " 704 "	150 "	10 "	8 "	5.6 to 1	30 x 12 "	Tribwdl
14 "	12 "	24. "	40 " 960 "	150 "	10 "	8 "	5.6 to 1	32 x 14 "	Tribwed

Goulds Double-Acting Triplex Piston Pump

150 Pounds
Pressure

350 Feet
Elevation

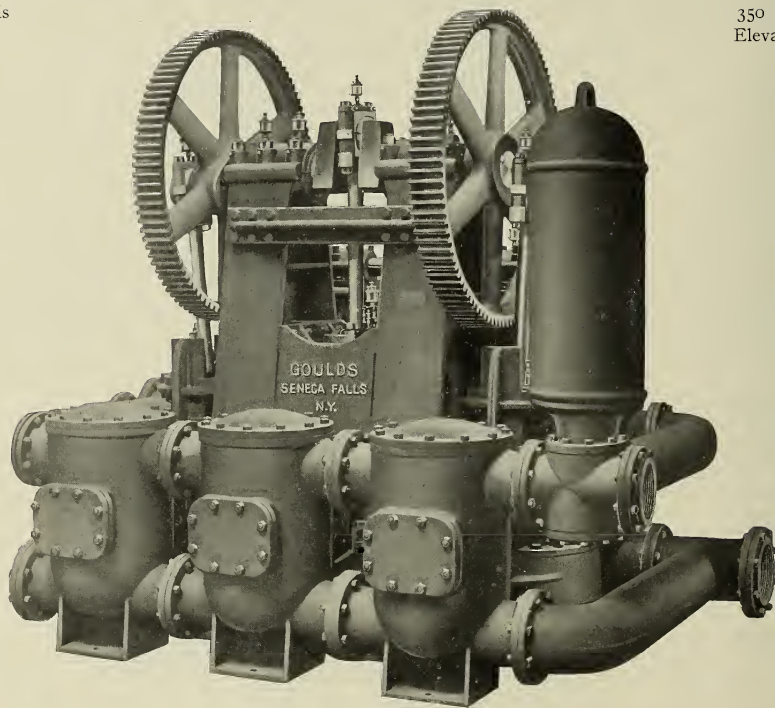


Fig. 1095. Size 10" x 12"

Specification

Fig. 1095—Double-Acting Triplex Piston Pump, for 150 pounds working pressure or 350 feet elevation.—General Water Supply, Municipal Water Works, Hydraulic Elevators, Pulp Grinders, etc.

Frame	Consists of two standards with center guide bolted between them and fastened to base, which forms a rigid foundation for working parts.
Crank Shaft	Steel forging.
Bearings	The crank shaft bearings are phosphor bronze; and pinion shaft bearings babbitt metal.
Gearing	Pump is fitted with double gearing of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Have adjustable bronze shoes which run in bored guides.
Connecting Rods	Forged steel, fitted at each end with adjustable bronze boxes, marine type.
Cylinders	Separate charcoal iron castings, bronze lined.
Pistons	Are made with followers and fitted with fibrous packing.
Piston Rods	Are of best quality forged steel.
Stuffing Boxes and Glands	Bronze and fitted with fibrous packing.
Valve Boxes	Separate charcoal iron castings, each containing a set of suction and discharge valves.
Valves	Rubber discs on bronze grid seats and have cylindrically wound springs.
Special Construction	Phosphor Bronze Pistons, Tobin Bronze Piston Rods, Rawhide Pinions, etc., special to order at extra price.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

For Table of Power required to operate, see page 181.

Fig. 1095. Sizes, Capacities, Etc.

PISTONS		Capacity per Revolution of Crank Shaft	Usual Speed and Capacity per Minute	SIZES OF PIPE		Geared	*Single Pulley	Cipher
Diameter	Stroke			Suction	Discharge			
5 in.	8 in.	3.9 gals.	45 revs., 175 gals.	5 in.	5 in.	5.5 to 1	20 x 8 in.	Waxirf
6 "	8 "	5.6 "	45 " 252 "	6 "	6 "	5.5 to 1	22 x 10 "	Waxix
7 "	8 "	7.7 "	45 " 346 "	6 "	6 "	5.5 to 1	22 x 10 "	Waxjak
7 "	10 "	9.8 "	42 " 411 "	7 "	6 "	5.3 to 1	26 x 10 "	Waxiob
8 "	10 "	12.7 "	42 " 533 "	8 "	7 "	5.3 to 1	26 x 10 "	Waxiwd
8 "	12 "	15.3 "	40 " 612 "	8 "	7 "	5.6 to 1	30 x 12 "	Waxish
9 "	12 "	19.4 "	40 " 776 "	8 "	7 "	5.6 to 1	30 x 12 "	Waxito
10 "	12 "	23.8 "	40 " 952 "	10 "	8 "	5.6 to 1	32 x 18 "	Waxiun
11 "	14 "	33.6 "	38 " 1276 "	12 "	10 "	5 to 1	36 x 20 "	Waysvo
12 "	14 "	40.3 "	38 " 1531 "	12 "	10 "	5 to 1	36 x 20 "	Wayswd

*Largest pulley that can be placed between pinions on shaft. If speed conditions or power require larger pulley, the pinion shaft may be extended and supported by outboard bearing. See page 222.

Goulds Double-Acting Triplex Piston Pump

75 Pounds
Pressure

170 Feet
Elevation

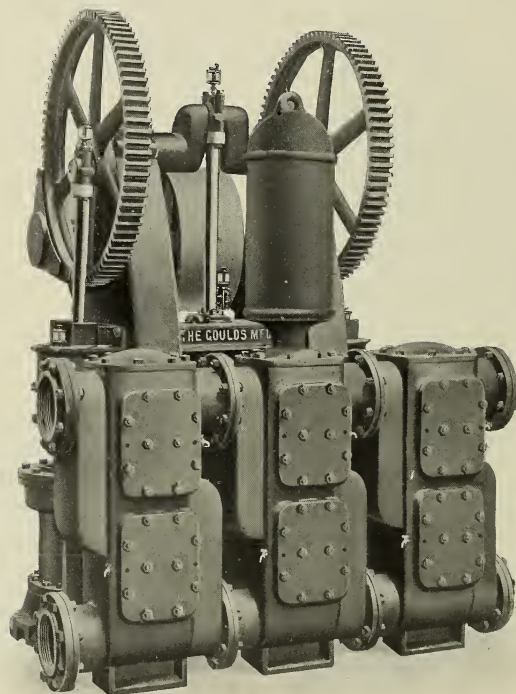


Fig. 1364. Size 9" x 12"

Specification

Fig. 1364—Double-Acting Triplex Piston Pump, for 75 pounds working pressure or 170 feet elevation.—Tank Pumping in Mills, Bleacheries, Dyehouses, Breweries, Oil Refineries, for Circulating Brine, etc.

Frame	Consists of two standards, held in alignment by center guide bolted between them. Standards bolted to base which forms a rigid support for working parts.
Crank Shaft	Steel casting (Open Hearth).
Bearings	Crank shaft bearings of phosphor bronze and pinion shaft bearings of babbitt metal.
Gearing	Pump is fitted with double gearing of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Have adjustable bronze shoes, which run in bored guides.
Connecting Rods	Forged steel, fitted at each end with adjustable bronze boxes, marine type.
Cylinders	Three separate charcoal iron castings bolted to base and standards. They are fitted with removable bronze linings.
Pistons	Are made with followers and fitted with fibrous packing.
Piston Rods	Are of best quality steel.
Stuffing Boxes and Glands	Bronze and fitted with fibrous packing.
Valve Boxes	Separate charcoal iron castings; each is bolted to its cylinder and to adjacent valve box by flanged connections.
Valves	Rubber discs on bronze grid seats and have cylindrically wound springs. Metal valves to order. Valves are accessible through hand-hole covers.
Air Chambers	Supplied with Pumps. Vacuum Chambers to order at extra price.
Oil Cups and Wrenches	Furnished with all Pumps.
Special Construction	Phosphor Bronze Pistons, Tobin Bronze Piston Rods, Rawhide Pinions to order at extra price.

For Table of Power required to operate, see page 181.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

Fig. 1364. Sizes, Capacities, Etc.

PISTONS		Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	SIZES OF PIPE		Geared	*Single Pulley	Cipher
Diameter	Stroke			Suction	Discharge			
8 in.	10 in.	12.7 gals.	42 revs., 533 gals.	8 in.	7 in.	5 to 1	30 x 7½ in.	Weakole
9 "	12 "	19.4 "	40 " 776 "	8 "	8 "	5.7 to 1	30 x 8 "	Wearl
11 "	12 "	29.1 "	40 " 1164 "	10 "	10 "	5.3 to 1	32 x 10 "	Wearho
12 "	14 "	40.5 "	38 " 1530 "	12 "	10 "	5.6 to 1	32 x 12 "	Weddod
14 "	16 "	58.8 "	36 " 2117 "	16 "	14 "	5.6 to 1	42 x 16 "	Weakoda

*Largest pulley that can be placed between pinions on shaft. If speed conditions or power require larger pulley, the pinion shaft may be extended and supported by outboard bearing. See page 222.

Goulds Double-Acting Triplex Piston Pump

75 to 125
Pounds Pressure

170 to 290
Feet Elevation

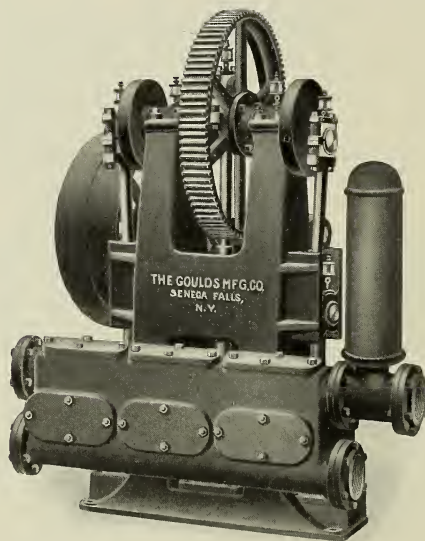


Fig. 1357. Size 5" x 8"

Specification

Fig. 1357—Double-Acting Triplex Piston Pump, for 75 to 125 pounds working pressure or 170 to 290 feet elevation.—Tank Pumping in Mills, Factories, Dyehouses, Breweries, Oil Refineries, for Circulating Brine, etc.

Frame	Consists of two standards with center guide and base in one casting.
Crank Shaft	Steel casting (Open Hearth).
Bearings	Best anti-friction metal.
Gearing	Pump is fitted with single gearing of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Have adjustable bronze shoes, which run in bored guides.
Connecting Rods	Forged steel, fitted at each end with adjustable bronze boxes, marine type.
Cylinders	Separate charcoal iron castings, having flanges for bolting. An extension of flange fits counterbore in base, giving permanent alignment. Fitted with bronze lining.
Pistons	Are made with followers and fitted with fibrous packing.
Piston Rods	Steel.
Stuffing Boxes and Glands	Bronze and fitted with fibrous packing.
Valve Boxes	Charcoal iron castings bolted to cylinders.
Valves	Rubber discs on bronze grid seats and have cylindrically wound springs; or bronze discs on bronze grid seats, according to service. Valves are accessible through hand-hole covers.
Air Chambers	Supplied with Pumps.
Oil Cups and Wrenches	Furnished with all Pumps.
Special Construction	Phosphor Bronze Pistons, Tobin Bronze Piston Rods, Rawhide Pinions to order at extra price

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

For Table of Power required to operate, see page 181.

Fig. 1357. Sizes, Capacities, Etc.

PISTONS		Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	Limit Working Pressure	SIZES OF PIPE		Geared	Tight and Loose Pulleys	Cipher
Diameter	Stroke				Suction	Discharge			
4 in.	6 in.	1.89 gals.	50 revs., 94 gals.	100 lbs.	4 in.	4 in.	5 to 1	24 x 4 in.	Vexaults
4½ "	8 "	3.22 "	45 " 144 "	125 "	5 "	5 "	5 to 1	28 x 5½ "	Vexaund
5 "	8 "	3.95 "	45 " 177 "	100 "	5 "	5 "	5 to 1	28 x 5½ "	Vexaurt
5½ "	8 "	4.80 "	45 " 216 "	75 "	5 "	5 "	5 to 1	28 x 5½ "	Vibreb
6 "	8 "	5.60 "	45 " 256 "	125 "	7 "	6 "	5 to 1	34 x 6½ "	Vibrefv
6½ "	8 "	6.71 "	45 " 301 "	100 "	7 "	6 "	5 to 1	34 x 6½ "	Vibregw
7 "	8 "	7.81 "	45 " 351 "	75 "	7 "	6 "	5 to 1	34 x 6½ "	Vibreha

Goulds Double-Acting Triplex Plunger Mine Pump

100 to 1500
Pounds Pressure

230 to 3500
Feet Elevation

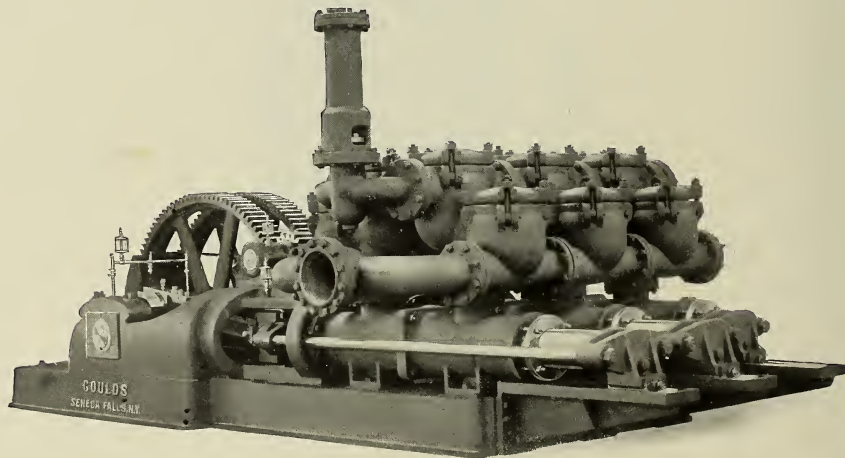


Fig. 1221. Size $7\frac{1}{2}'' \times 16''$

Specification

Fig. 1221—Horizontal Double-Acting Triplex Plunger Pump, Outside Packed, for 100 to 1500 pounds working pressure or 230 to 3500 feet elevation, as per Table below.—For Mine Pumping, Municipal Water Works, Filter and Hydraulic Presses, Hydraulic Riveting Machines, Hydraulic Cranes, etc.

Crank Shaft	The forged steel crank shaft is in two pieces, each having a single throw with a gear at the inner end. These two gears carry the centre crank pin.
Bearings	Crank shaft bearings are babbitted and have wedge and screw adjustment. Pinion shaft bearings are babbitted.
Gearing	Pump is fitted with double gearing. The pinions are semi-steel castings, machine cut. Gears are charcoal iron, machine cut.
Driving Connections	Power for driving may be applied at either side of Pump. For electric or other high speed motor power intermediate gearing and auxiliary shaft are used and can be supplied to order at extra price.
Crossheads	Have adjustable shoes which are babbitted and run in bored guides.
Connecting Rods	Are forged steel and have bronze boxes with strap head and wedge adjustment at each end.
Cylinders	Charcoal iron fitted with bronze linings.
Plungers	Hard cast iron, turned and ground true and smooth.
Glands	Hard cast iron and readily accessible.
Valve Boxes	Separate charcoal iron castings.
Valves	Extra heavy bronze with leather or rubber facing.
Pipe Connections	Suction or discharge connections can be made at either side of Pump.
Spring Alleviator	Furnished on $7\frac{1}{2} \times 16$ in. Pumps and smaller sizes.
Oil Cups	Furnished with all Pumps.
and Wrenches	
Special Construction	Phosphor Bronze Plungers and Glands to order at extra price.

Fig. 1221. Sizes, Capacities, Etc.

PLUNGERS		Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	Working Pressures	SIZES OF PIPE		Geared	Cipher
Diameter	Stroke				Suction	Discharge		
$3\frac{1}{4}$ in.	16 in.	3.45 gals.	36 revs., 124 gals.	1500 lbs.	5 in.	4 in.	6 to 1	Tokeqr
$3\frac{3}{4}$ "	16 "	4.59 "	36 " 165 "	1200 "	5 "	4 "	6 to 1	Tokenbs
$4\frac{1}{4}$ "	16 "	5.89 "	36 " 212 "	1000 "	6 "	5 "	6 to 1	Tokenst
$4\frac{3}{4}$ "	16 "	7.36 "	36 " 265 "	800 "	6 "	5 "	6 to 1	Toketa
$5\frac{1}{4}$ "	16 "	9. "	36 " 324 "	600 "	7 "	6 "	6 to 1	Roative
$5\frac{3}{4}$ "	16 "	10.8 "	36 " 388 "	500 "	8 "	7 "	6 to 1	Rusebb
$6\frac{1}{2}$ "	16 "	13.8 "	36 " 490 "	390 "	8 "	7 "	6 to 1	Ruseck
$7\frac{1}{2}$ "	16 "	18. "	36 " 660 "	300 "	10 "	8 "	6 to 1	Rusedr
$8\frac{1}{2}$ "	16 "	23.5 "	36 " 846 "	216 "	12 "	10 "	6 to 1	Rusedsa
10 "	16 "	32.6 "	36 " 1170 "	150 "	12 "	10 "	6 to 1	Tokeux
12 "	16 "	47. "	36 " 1700 "	108 "	14 "	12 "	6 to 1	Tokevo

Goulds Portable Triplex Electric Mine Pump

130 Pounds
Pressure

300 Feet
Elevation

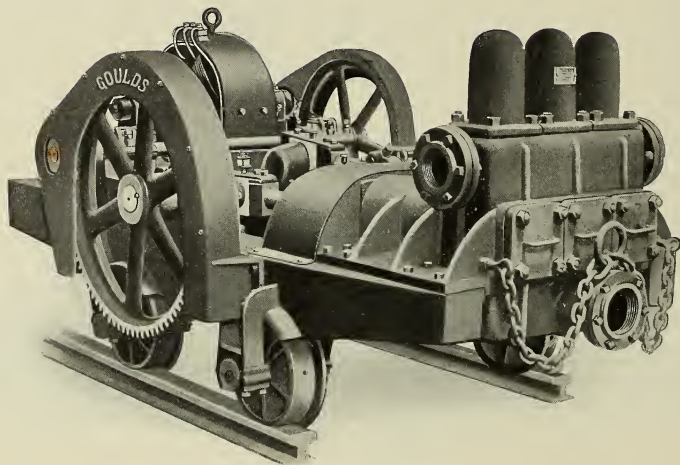


Fig. 966. Size 6½" x 8"

Specification

Fig. 966—Portable Triplex Electric Mine Pump, Horizontal Single-Acting Outside Packed Plunger Type, for 130 pounds working pressure, or 300 feet elevation, especially designed for pumping Mine Sumps.

Truck	Truck is made wholly of iron and is fitted with cast iron single flange wheels. This truck cannot be affected by moisture and will always maintain a correct alignment of the Pump and Motor, assuring easy running and long life.
Crank Shaft	Steel casting (Open Hearth).
Bearings	Crank shaft and pinion shaft bearings are of babbitt metal.
Gearing	Pump gear and motor gear are made of charcoal iron, machine cut. The pinions are bronze.
Connecting Rods	Have adjustable bronze boxes with strap head and wedge adjustment on crank end and bronze bushing on plunger end.
Cylinders and Valve Boxes	Charcoal iron in one casting. Cylinders are fitted with phosphor bronze linings.
Plungers	Close grained hard iron, but are made of phosphor bronze to order at extra price.
Glands	Iron and of easy access for adjustment.
Valves	Rubber discs on bronze grid seats accessible through hand-hole covers. Metal Valves to order.
Oil Cups and Wrenches	Furnished with all Pumps.

Special Construction Phosphor Bronze Plungers, Glands, Rawhide Pinions to order at extra price.

Our price includes the Pump complete, iron truck with wheels, the gearing necessary to connect to motor, but will not include the motor unless so specified. Correspondents should advise the width of track, height of roof, also furnish working drawings of motor.

For Table of Power required to operate, see page 181.

Fig. 966. Sizes, Capacities, Etc.

PLUNGERS		Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	SIZES OF PIPE		Crank and Pinion Shafts Geared	Cipher Bronze Fitted	Cipher Iron
Diameter	Stroke			Suction	Discharge			
5 in.	8 in.	2.0 gals.	45 revs., 90 gals.	3 in.	3 in.	5 to 1	Briefer	Blunder
6½ "	8 "	3.4 "	45 " 153 "	4 "	4 "	5 to 1	Baldest	Blunderbus
8 "	8 "	5.2 "	45 " 234 "	5 "	4 "	5 to 1	Brimful	Blundering

Goulds Single-Acting Triplex Pressure Pump

900 to 5000
Pounds Pressure

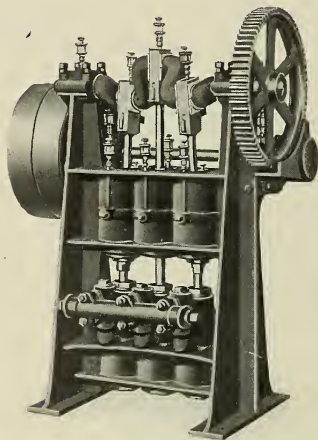


Fig. 997. No. A. Size 1" x 4"
Type of Nos. A and K

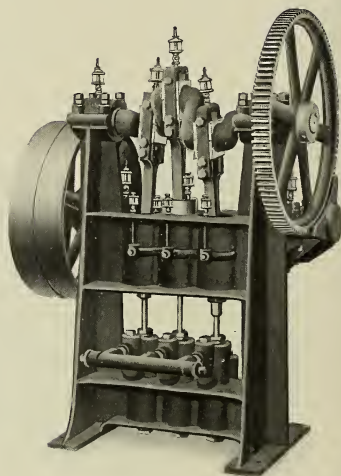


Fig. 997. No. B. Size $\frac{3}{4}$ " x 6"
Type of Nos. B, L and M

Specification

Fig. 997—Single-Acting Triplex Pressure Pump. Type of the No. M and smaller sizes, for pressures varying from 900 to 5000 pounds, per table below.—For Oil Refineries, Cotton Oil Mills, Sugar and Glucose Refineries, Tobacco Works, Steel Works, on Filter and Hydraulic Presses, Hydraulic Riveting Machines, etc.

Crank Shaft	Steel casting (Open Hearth).
Bearings	Crank shaft bearings are of phosphor bronze and pinion shaft bearings are of babbitt metal.
Gearing	Gear and pinion of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Cylindrical in form, made of cast iron and run in bored guides.
Connecting Rods	Have bronze boxes with strap head and key adjustment at crank end and bronze bushing at plunger end.
Cylinders and Connecting Pipes	Phosphor bronze.
Plungers	Phosphor bronze. Will be furnished of steel if required.
Glands	Phosphor bronze.
Valves	All sizes have metal valves.
Oil Cups and Wrenches	Furnished with all Pumps.

For Table of Power required to operate, see page 181.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

Fig. 997, Sizes, Capacities, Etc.

No.	PLUNGERS		Capacity one Revolution of Crank Shaft	Usual Speed and Capacity per Minute	Limit Pressure per Square In.	SIZES OF PIPE		Geared	Tight and Loose Pulleys	Cipher
	Diameter	Stroke				Suction	Discharge			
A	1 in.	4 in.	.04 gals.	50 revs., 2. gals.	1500 lbs.	1 1/4 in.	1 in.	5 to 1	15x3 in.	Riteho
K	1 1/4 "	4 "	.06 "	50 " 3. "	900 "	1 1/4 "	1 "	5 to 1	15x3 "	Riteil
B	3/4 "	6 "	.03 "	50 " 1.5 "	5000 "	1 "	3/4 "	7 to 1	26x4 "	Ritejm
L	1 1/4 "	6 "	.09 "	50 " 4.5 "	1800 "	1 1/4 "	1 "	7 to 1	26x4 "	Riteka
M	1 1/2 "	6 "	.13 "	50 " 6.5 "	1200 "	1 1/4 "	1 "	7 to 1	26x4 "	Ridefu

See pages 210-211 for larger sizes.

Goulds Single-Acting Triplex Plunger Pressure Pump

200 to 1500
Pounds Pressure

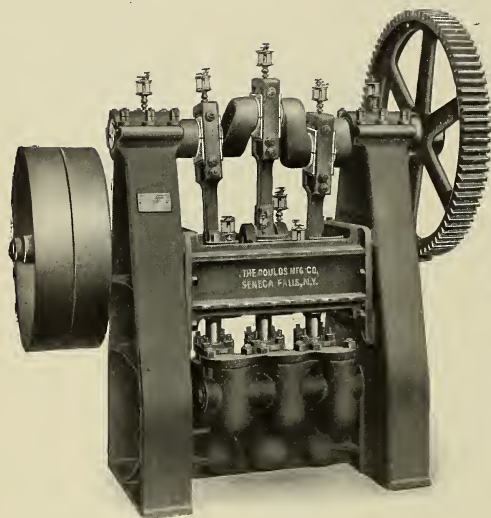


Fig. 997. No. S. Size $2\frac{1}{4}$ " x 6"
Type of Nos. S, C and F

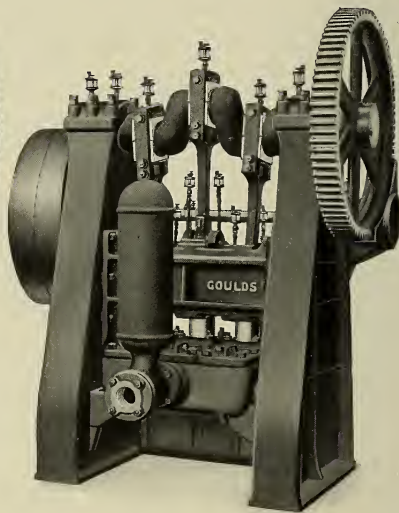


Fig. 997. No. D. Size $4\frac{1}{2}$ " x 8"
Type of Nos. D, E, G and H

Specification

Fig. 997—Single-Acting Triplex Pressure Pump, designed and built in sizes No. S and larger for pressures varying from 200 to 1500 lbs. per table below.—For Oil Refineries, Cotton Oil Mills, Sugar and Glucose Refineries, Tobacco Works, Steel Works, Hydraulic Cranes, Filter and Hydraulic Presses, Hydraulic Riveting Machines, on Pipe Lines, etc.

Crank Shaft	Steel casting (Open Hearth).
Bearings	Crank shaft bearings are of phosphor bronze and pinion shaft bearings are of babbitt metal.
Gearing	Gear and pinion are made of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Are fitted with adjustable bronze shoes which run in bored guides.
Connecting Rods	Have bronze boxes with strap head and key adjustment at both ends.
Cylinders and Valve Boxes	All in one casting of charcoal iron unless otherwise ordered.
Plungers	Iron unless otherwise ordered. Plungers 3 in. diameter and smaller will be made of steel without extra cost if preferred.
Glands	Iron and of easy access for adjustment.
Valves	All sizes have metal valves.
Air Chambers	Supplied with Pumps built for pressures up to 400 pounds.
Oil Cups	Furnished with all Pumps.
and Wrenches	
Special Construction	Phosphor Bronze Plungers, Lined Cylinders and Glands to order at extra price.

For Table of Power required to operate, see page 181.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

Fig. 997. Sizes, Capacities, Etc.

No.	PLUNGERS		Capacity One Revolution of Crank Shaft	Usual Speed and Capacity per Minute	Limit Pressure per Square Inch	SIZES OF PIPE		Geared	Tight and Loose Pulleys	Cipher
	Diameter	Stroke				Suction	Discharge			
S	2¼ in.	6 in.	.30 gals.	50 revs., 15 gals.	1500 lbs.	2 in.	1½ in.	5 to 1	30 x 5 in.	Ridegsl
N	3 "	6 "	.55 "	50 " 27 "	650 "	2 "	2 "	5 to 1	30 x 5 "	Ridehm
P	4 "	6 "	1 "	50 " 50 "	350 "	2 "	2 "	5 to 1	30 x 5 "	Rideis
R	5 "	6 "	1.53 "	50 " 76 "	240 "	3 "	3 "	5 to 1	30 x 5 "	Roatila
C	2½ "	8 "	.41 "	45 " 18 "	1500 "	3 "	2 "	5 to 1	36 x 6½ "	Roatat
D	4½ "	8 "	1.65 "	45 " 74 "	400 "	3 "	3 "	5 to 1	36 x 6½ "	Roatam
E	6½ "	8 "	3.44 "	45 " 154 "	200 "	4 "	4 "	5 to 1	36 x 6½ "	Roatfo
F	3 "	8 "	.73 "	45 " 32 "	1500 "	3 "	2 "	5 to 1	42 x 6½ "	Roatget
G	4½ "	8 "	1.65 "	45 " 74 "	600 "	3 "	3 "	5 to 1	42 x 6½ "	Roatgof
H	6½ "	8 "	3.44 "	45 " 154 "	300 "	4 "	4 "	5 to 1	42 x 6½ "	Roathad

See pages 208, 209 for sizes adapted higher pressure.

Goulds Double-Acting Piston Vacuum Pump

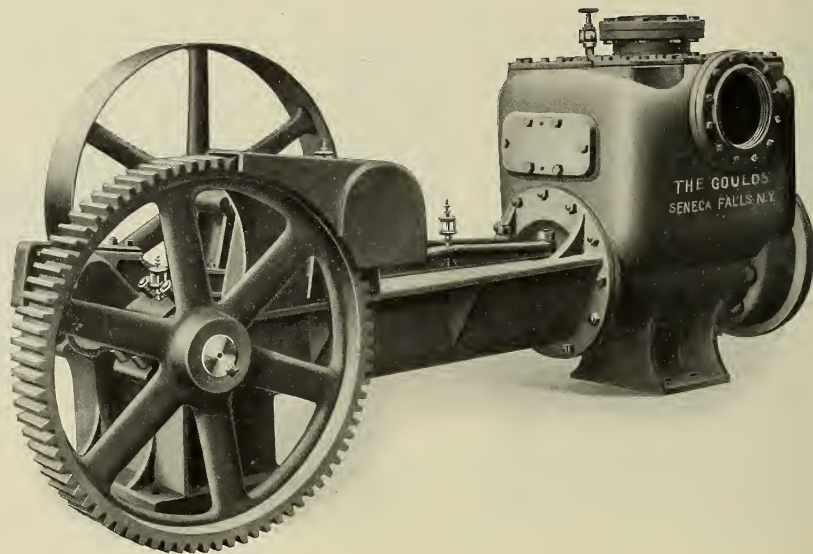


Fig. 1049. Size 18" x 18"

Specification

Fig. 1049—Geared Horizontal Double-Acting Piston Vacuum Pump, for suction-box Pump on paper machines; and as Vacuum Pump in connection with vacuum pans; and as Vacuum Pump in connection with surface condensers.

Crank Shaft	Steel casting (Open Hearth).
Bearings	Crank shaft and pinion shaft bearings are of babbitt metal.
Gearing	Gear and pinion are made of charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Cast iron. The planed crosshead ways are adjustable.
Connecting Rods	Have phosphor bronze boxes with strap heads and wedge adjustment at both ends.
Cylinder	Charcoal iron fitted with removable bronze lining.
Piston	Bronze with a bronze follower and fitted with fibrous packing.
Piston Rod	Is of Tobin bronze.
Stuffing Box and Gland	Are made wholly of bronze and fitted with fibrous packing.
Valves	Rubber discs on bronze grid seats and have cylindrically wound springs.
Pipe Connections	Suction at top and one side of cylinder, discharge at the other side.
Oil Cups and Wrenches	Supplied with all Pumps.

Fig. 1049. Sizes, Capacities, Etc.

PISTON		Displacement One Revolution of Crank Shaft	Usual Speed and Displacement per Minute	SIZES OF PIPE		Geared	Single Pulley	Cipher
Diameter	Stroke			Suction	Discharge			
8 in.	10 in.	4.3 gals.	40 revs., 172 gals.	5 in.	5 in.	4 to 1	30 x 4 in.	Dreba
12 "	10 "	9.6 "	40 " 384 "	5 "	5 "	4 to 1	30 x 5 "	Drebe
14 "	10 "	13.2 "	40 " 528 "	6 "	6 "	4 to 1	30 x 5 "	Drebe
14 "	14 "	18.6 "	38 " 706 "	6 "	6 "	4 to 1	36 x 6 "	Curyme
16 "	16 "	27.8 "	36 " 1000 "	8 "	8 "	4 to 1	36 x 6 "	Cusab
18 "	18 "	39.5 "	34 " 1343 "	10 "	10 "	4 to 1	42 x 8 "	Repeql

Goulds Single-Acting Triplex Plunger Pump for Semi-Fluids

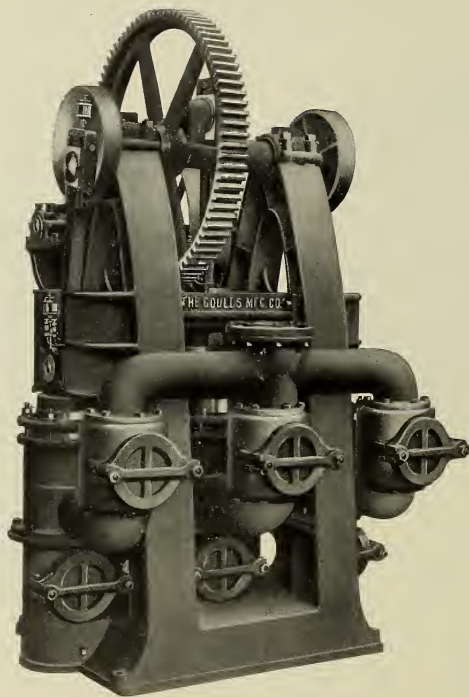


Fig. 1128. Size 9" x 12"

Specification

Fig. 1128—Single-Acting Triplex Plunger Pump for semi-fluids, designed and built to stand constant hard work in paper mills and handling sewage.

Crank Shaft	Steel casting (Open Hearth).
Bearings	Crank shaft and pinion shaft bearings are of babbitt metal.
Gearing	Charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Crossheads	Are fitted with removable shoes which are babbitted and run in bored guides.
Connecting Rods	Have bronze boxes with strap head and wedge adjustment at crank end and adjustable bronze boxes, marine type, at crosshead end.
Cylinders	Separate charcoal iron castings, bronze lined.
Valve Boxes	Suction valve boxes are cast separate, discharge valve boxes with cylinders. Both are charcoal iron.
Plungers	Phosphor bronze, turned and ground true and smooth.
Glands	Iron and of easy access for adjustment.
Valves	Bronze balls.
Valve Seats	Are of bronze and are held in place by four bolts provided with a locking device. The seats have also a lock ring extension which fits into a bored hole in the casting.
Lubrication	Oil cups for connecting rods and crossheads. Other bearings have grease boxes.
Wrenches	Supplied with all Pumps.

Fig. 1128. Sizes, Capacities, Etc.

PLUNGERS		Capacity One Revolution of Crank Shaft	Dry Paper in 24 Hours at 30 R. P. M.	SIZES OF PIPE		Geared	Single Pulley	Cipher
Diameter	Stroke			Suction	Discharge			
8 in.	12 in.	7.8 gals.	25 tons	7 in.	7 in.	5 to 1	30 x 6½ in.	Wrathijos
9 "	12 "	9.9 "	32 "	8 "	8 "	5.3 to 1	30 x 8½ "	Wrathop
10 "	12 "	12.2 "	40 "	8 "	8 "	5.3 to 1	30 x 10 "	Wrathus
12 "	12 "	17.6 "	56 "	10 "	10 "	5.3 to 1	30 x 12 "	Wrecoen

Goulds Single-Acting Triplex Plunger Pump for Semi-Fluids

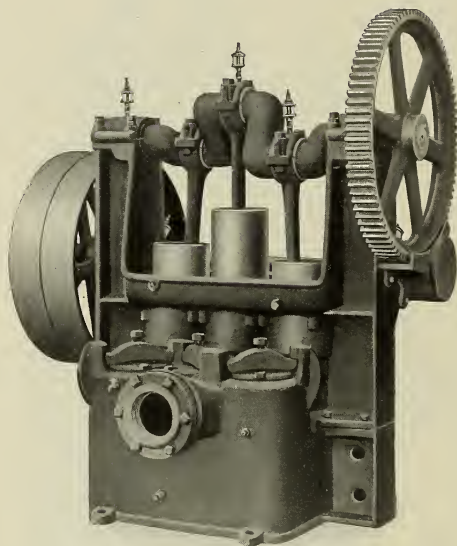


Fig. 1017. Size 7" x 8"

Specification

Fig. 1017—Single-Acting Triplex Plunger Pump, for Semi-Fluids. This Pump is especially designed for pumping Tar, Soap, Mud, Tan Liquor, Oils, Chemicals, Sewage, and heavy or fibrous solutions. Is built to stand a constant working pressure of 43 pounds, or elevation of 100 feet.

Crank Shaft	Steel casting (Open Hearth).
Bearings	Crank shaft and pinion shaft bearings are of babbitt metal.
Gearing	Gear and pinion are charcoal iron, machine cut. A gear guard covers the pinion and adjacent teeth of the gear.
Connecting Rods	Are of unusual length. Sizes 8 x 10 in. and larger have bronze boxes with strap head and wedge adjustment at crank end and bronze bushing at plunger end. Sizes 7 x 8 in. and smaller have adjustable bronze boxes at crank end and bronze bushing at plunger end.
Cylinders	Close grained iron, cast in one piece with standards.
Plungers	Hard iron, turned and ground true and smooth.
Glands	Iron and of easy access for adjustment.
Base and Valve Boxes	Charcoal iron in one casting, of liberal proportion, affording large valve area, direct water ways and of easy access.
Valves	Are made to suit requirements; for tar, iron ball valves, with iron seats; for ammoniacal liquor, iron wing valves with iron seats are used.
Oil Cups and Wrenches	Supplied with all Pumps.

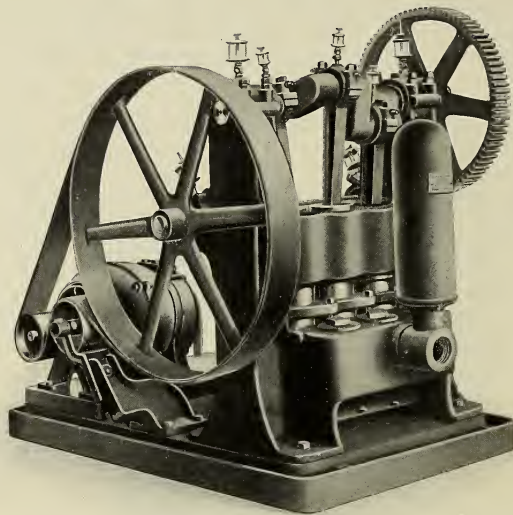
For Table of Power required to operate, see page 181.

For Electric and other Motive Power and Methods of Control, see pages 218 to 226.

Fig. 1017. Sizes, Capacities, Etc.

PLUNGERS		Capacity one Revolution of Crank Shaft	Usual Speed and Capacity per Minute	SIZES OF PIPE		Geared	Tight and Loose Pulleys	Cipher
Diameter	Stroke			Suction	Discharge			
4 in.	4 in.	0.65 gals.	40 revs., 26 gals.	3 in.	3 in.	5 to 1	20 x 3 in.	Surgent Surgeon
4 "	6 "	1. "	40 " 40 "	3 "	3 "	5 to 1	20 x 3 "	Swack
5 "	6 "	1.5 "	40 " 60 "	4 "	4 "	4 to 1	20 x 4 "	Swiss
5 "	8 "	2. "	40 " 80 "	4 "	4 "	4 to 1	20 x 4 "	Switch
7 "	8 "	4. "	40 " 160 "	5 "	5 "	4 to 1	30 x 5 "	Tilting
8 "	10 "	6.5 "	40 " 260 "	6 "	6 "	5 to 1	36 x 6 "	Tinted
8 "	12 "	7.8 "	40 " 312 "	6 "	6 "	5 to 1	36 x 6 "	

Driving Connections for Goulds Triplex Power Pumps



Form "A" (Cipher, Forma), with Bed Plate and Idler

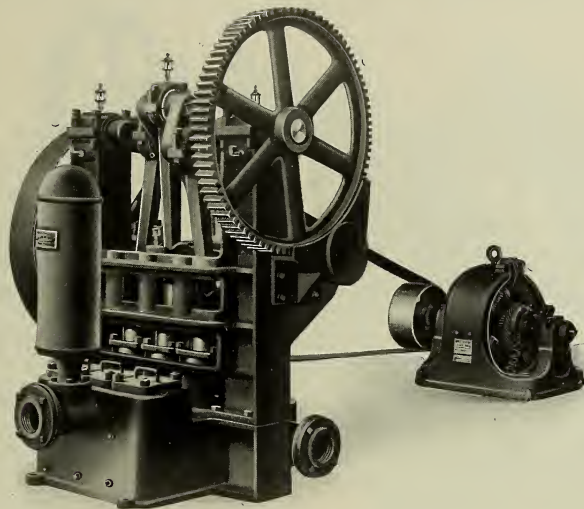
Form "A," consists of Bed Plate and Idler for belt drive from electric motor. Rawhide Pump Pinions furnished on sizes $3\frac{1}{2} \times 4$ in. and smaller; larger sizes extra to order. It runs smoothly and noiselessly. It is of neat, compact design and easy to take care of. Rendered entirely automatic by use of switch which cuts out or throws in electric current as water in tank rises or falls. Either an open tank in upper part of building or compression tank in basement can be used. Always specify dimensions and speed of motor pulley and required number of gallons per minute.

This form of Driving Connection may be applied to the following figures to which we refer: Figs. 924, 957, 1009, 1140, 1157, 1176, 1190, 1193.

Prices upon application.

In telegraphing, place cipher representing desired Form immediately after cipher standing for type and size Pump selected.

Driving Connections for Goulds Triplex Power Pumps



Form "B" (Cipher, Formb), with Rawhide Pinion and Single Pulley for Belt from Electric Motor.

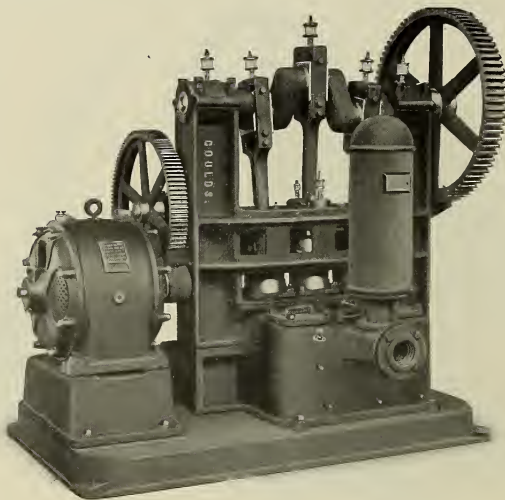
Form "B," Rawhide Pinion and Single Pulley for belt drive from Electric or other high speed Motor. This form of belt drive is practically noiseless and wherever space will permit, and dampness does not prohibit, we recommend it. Pulleys charged extra according to size. Always specify dimensions and speed of motor pulley and required number of gallons per minute.

This form of Driving Connection may be applied to following Figures to which we refer: Figures 924, 957, 997, 1009, 1098, 1140, 1157.

Prices upon application.

In telegraphing, place cipher representing Form immediately after cipher standing for type and size Pump selected.

Driving Connections for Goulds Triplex Power Pumps



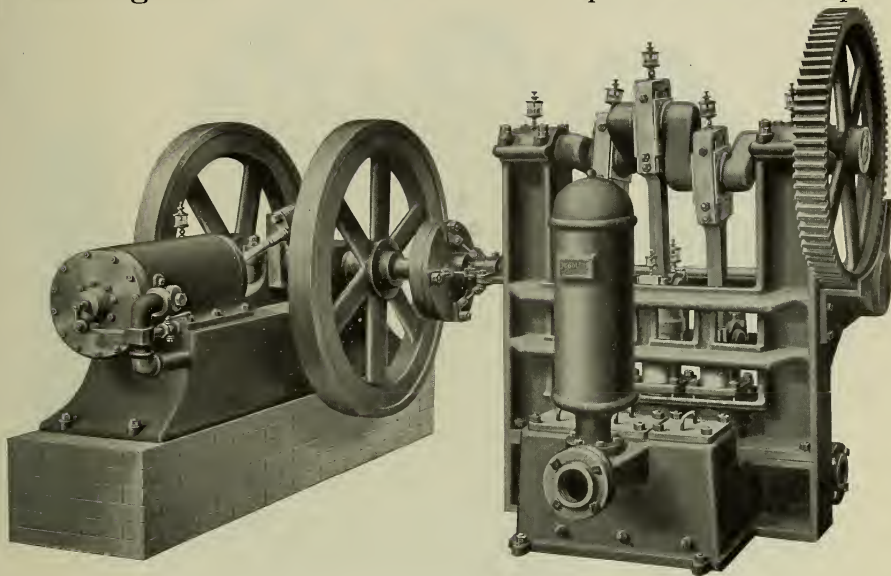
Form "C" (Cipher, Formc), Intermediate Gearing, Rawhide Motor Pinion and Bed Plate for Geared Connection to Electric Motor

Form "C," Intermediate Gearing, Rawhide Motor Pinion and Bed Plate for geared connections to electric motor, in damp places, where some noise is no objection, or in places where economy of space is a first requisite, we recommend. Rawhide Pump Pinions extra. Orders should be accompanied by detail motor drawings. State required number of gallons per minute. In Figures 957, and 924 types, Motors are usually placed behind pumps, instead of at end as shown. In largest sizes of pumps bed plates are generally dispensed with. This Form of Driving Connection may be applied to following Figures to which we refer: Figures 924, 957, 997, 1098, 1009, 1140, 1157.

Prices upon application.

In telegraphing, place cipher representing desired Form immediately after cipher standing for type and size Pump selected.

Driving Connections for Goulds Triplex Power Pumps



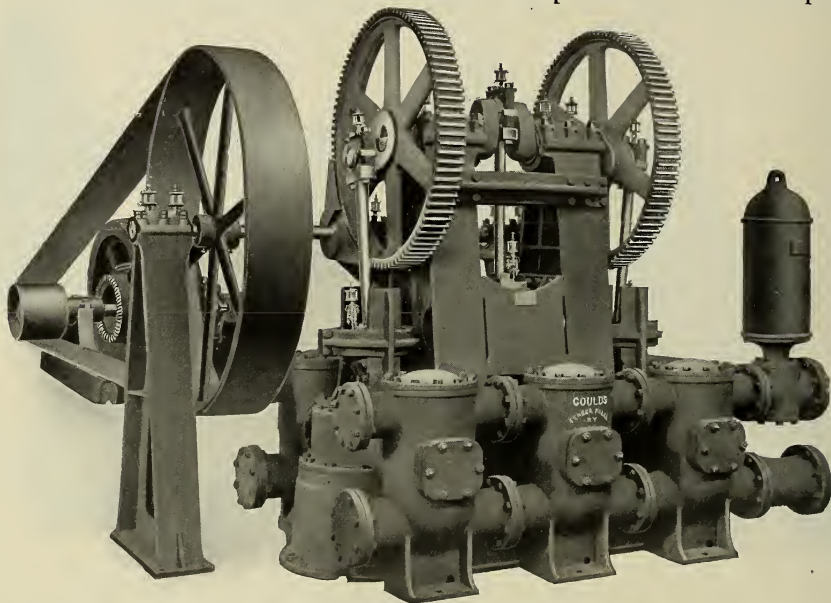
Form "D" (Cipher Formd), Friction Clutch for Direct Connection to Engine Shaft,
with or without Bed Plate

Form "D," Friction Clutch connection to Engine Shaft; a very satisfactory connection to Steam, Gas and Gasoline Engines, where engine speeds may approximate 175 to 225 R. P. M. Always specify speed of engine shaft and required number of gallons per minute. Can be furnished with or without bed plate. This form of Driving Connection may be applied to following Figs. to which we refer: Figs. 924, 957, 997, 1009, 1140, 1157.

Prices upon application.

In telegraphing, place cipher representing desired Form immediately after cipher standing for type and size Pump selected.

Driving Connections for Goulds Triplex Power Pumps



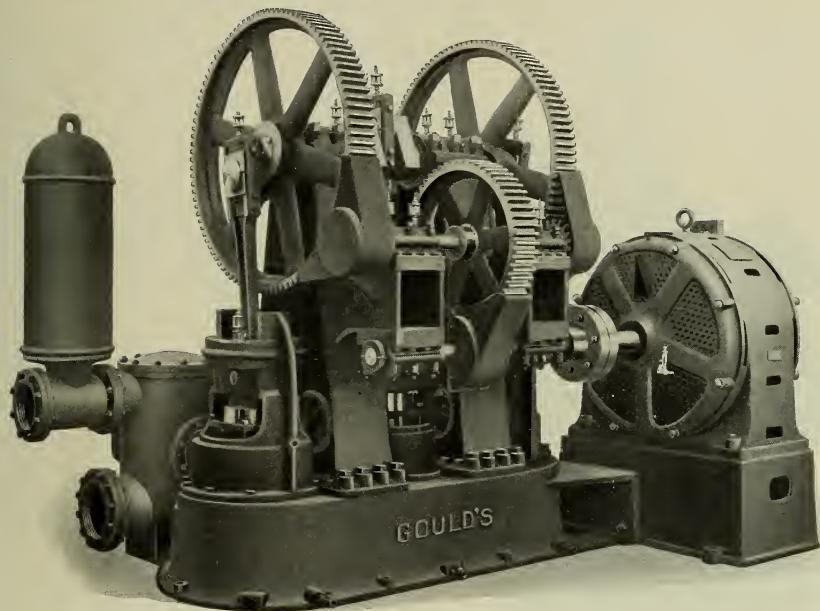
Form "E" (Cipher, Forme)

Form "E," Driving Connection, consists of extended pinion shaft supported by outboard bearing for carrying driving pulley where speed conditions require larger diameter pulley than can be placed between bearings back of Pump. Pulleys extra according to size. Always specify dimensions and speed of motor pulley and required number of gallons per minute. Can be applied to any of the following Triplex Power Pumps: Figs. 1283, 920, 1095, 1364, 1367.

Prices upon application.

In telegraphing, place cipher, representing desired Form, immediately after cipher standing for type and size Pump selected.

Driving Connections for Goulds Triplex Power Pumps



Form "I" (Cipher, Formi)

Form "I" Driving Connection consists of auxiliary shaft (running in self-oiling bearings), iron gear and pinion and shaft coupling for connection to electric or other high speed motor. Rawhide motor and Pump pinions and motor bed plates extra to order. Always specify speed of motor shaft and required number of gallons per minute. Can be applied to any of the following Triplex Power Pumps: Figs. 1283, 920, 1095, 1364, 1348, 1367. Prices upon application.

In telegraphing, place cipher, representing desired Form, immediately after cipher standing for type and size Pump selected.

Goulds By-Pass for Triplex Boiler Feed Pumps

AND APPROXIMATE TABLE SHOWING SIZE SINGLE-ACTING TRIPLEX PUMP FOR VARIOUS SIZES BOILERS

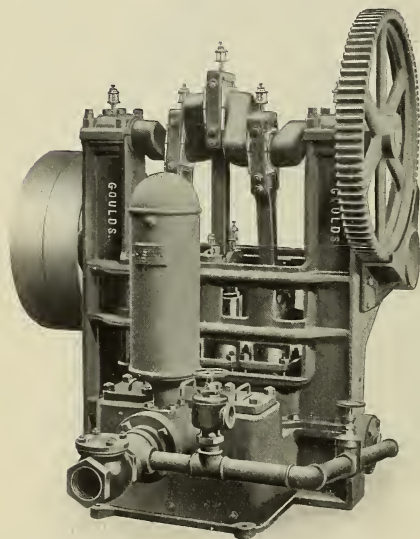


Table is based on 30 pounds feed water per horse power per hour, which is the standard adopted by the American Society of Mechanical Engineers, and is the generally accepted commercial standard by boilermakers and users.

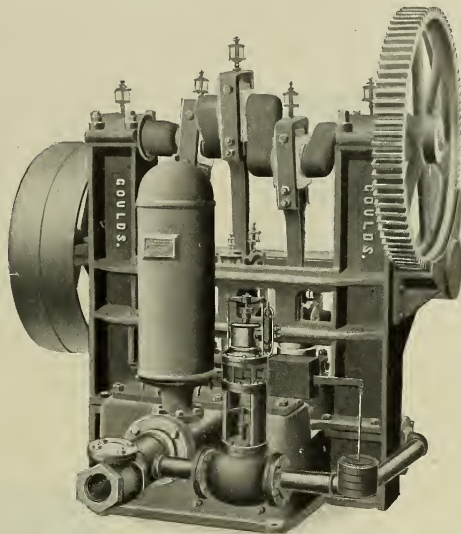
Size Boiler	Size of By-Pass Pipe and Valves	Size Triplex Pump
30 h. p.	1 in.	1 3/4 x 2 1/2 in.
50 "	1 "	2 x 3 "
100 "	1 "	2 1/2 x 4 "
200 "	1 1/4 "	3 1/2 x 4 "
300 "	1 1/4 "	4 x 6 "
500 "	1 1/2 "	5 x 6 "
600 "	1 1/2 "	5 x 8 "
850 "	2 "	6 x 8 "
1,200 "	2 1/2 "	7 x 8 "
1,500 "	2 1/2 "	7 x 10 "
2,000 "	2 1/2 "	8 x 10 "
3,000 "	3 "	8 1/2 x 12 "
3,500 "	3 "	9 x 12 "
4,000 "	4 "	10 x 12 "

Control "K"

Pumps fitted with Control "K" have by-pass with gate valve and discharge check valve. Water relief valve, extra, to order.

Goulds Automatic Pressure Regulator and By-Pass

Pump running continuously and by-passing when up to pressure.



Control "L"

Control "L," Automatic Pressure Regulator and By-Pass may be used to advantage where Pumps are operated from line shaft, steam engine, gas engine, or electric motor either direct connected or belted, when demand on Pump is practically constant.

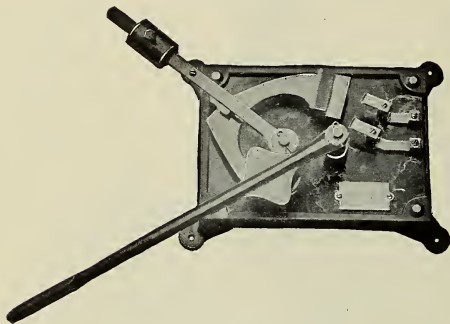
In operation the discharge pressure on the Pump is controlled by the pressure in the compression tank. The Regulator is adjusted to open the by-pass valve whenever the limit pressure is reached and the by-pass is kept open until the pressure begins to drop; the By-Pass then closes and the Pump discharges into the tank until limit pressure is again attained.

This method of control is very simple and may be successfully applied to Pumps operating Hydraulic Elevators, Hydraulic Presses, Riveting Machines, etc.

Prices upon application.

Z. & H. Automatic Electric Switches and Motor Starters

For Oben Tank Pumping System



Type "A" Automatic Switch

Type "A"—Single-Pole Automatic Switch, illustrated, can be used to start Direct Current Compound Wound Motors up to and including 1 Horse Power, not exceeding 250 volts. Also on Alternating Current Motors up to and including 1 Horse Power, not exceeding 125 volts. Price, \$17.50.

Type "B"—Double-Pole Automatic Switch, not illustrated, is preferred over the Single-Pole Switch for Alternating Current work. Its limitations are the same as Type "A." Price, \$20.00.

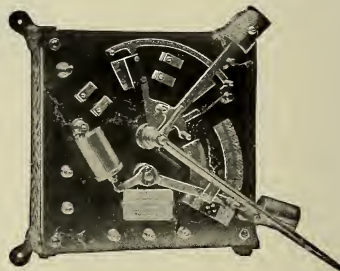
Type "C"—Double-Pole Automatic Switch, not illustrated, does not differ from Type "B," except that it is made to use on higher voltages up to 500 to 600. Price, \$21.00.

Type "D"—Automatic Motor Starter, illustrated, can be used on all Direct Current Compound Wound Motors larger than 1 Horse Power. Also on two and three-phase Alternating Current Motors up to 5 Horse Power.

TYPE "D" AUTOMATIC MOTOR STARTER			
Size of Motor	Starter for 110 Volt Circuits	Starter for 220 Volt Circuits	Starter for 500 Volt Circuits
½ H. P.	\$51.00	\$51.00	\$56.00
1 "	52.50	52.50	57.00
2 "	55.00	55.00	60.00
3 "	60.00	60.00	65.00
5 "	66.00	66.00	72.50
7½ "	86.00	83.00	90.00
10 "	93.00	88.00	96.00
15 "	115.00	109.00	119.00
20 "	154.00	144.00	158.00
25 "	176.00	165.00	180.00

Inquiries and orders should specify horse power of motors and voltage of same.

In practice, Direct Current Motors Compound Wound have proven so much more satisfactory than either Shunt or Series Wound Motors that we advise their exclusive use.



Type "D" Automatic Motor Starter

Strainers, Pressure and Vacuum Chamber

Fig. 964, Special Suction Pipe Strainer, protects the Pump from foreign matter which might enter the valves. It is made with a wire basket, which is easily removed for cleansing.

A Strainer of this kind should be used in connection with all Triplex Pumps, especially with the small sizes where foreign matter is apt to enter the suction box, tripping the valves and reducing the rated capacity of Pump.

Fig. 964. Sizes, Prices, Etc.

Size, inches.....	*¾	*1	*1¼	*1½	2	2½	3
Price.....	\$2.25	2.50	3.00	4.00	6.00	8.00	12.00

*Screwed ends.

Fig. 36, represents our Heavy Galvanized Wrought Iron Strainer with flanged joint.

This Strainer is especially adapted for use in mine pumps or shafts, as it will permit of hard usage and will not break as easily as a cast iron strainer.

Fig. 36. Wrought-Iron Strainer. Sizes, Prices, Etc.

Diameter Suction Pipe.....	3	4	5	6	7	8	9	10	12
Flange Joint.....	\$4.25	6.65	8.00	9.75	11.45	14.90	20.60	23.00	28.60

Fig. 1400, represents our Iron Pressure or Vacuum Chamber for use in connection with Triplex or other Power Pumps.

Fig. 1400. Sizes, Prices, Etc.

A—Diameter Flange, in....	7	7	9	9	11½
K—Diameter Chamber, in...	10	10½	13½	14¾	17½
H—Height, in.....	32	35	35	48½	47½
Price.....	\$7.50	9.00	16.00	30.00	40.00

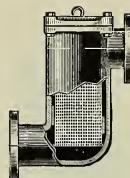


Fig. 964

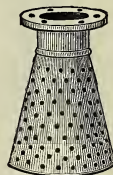


Fig. 36



Fig 1400

Goulds Vertical Power Force Pumps

With Crank Shaft, for Either Hand or Power.

Fig. 1204 represents our new Vertical Power Force Pump, or, as it is often called, "Covered Crank Pump." Cut of Fig. 1204 gives sectional view, showing arrangement of plunger and valve in the standard, making a complete pump for drawing water from cisterns, shallow wells and streams, where the vertical suction lift is not over twenty-five feet. The Pump, as we now build it, having crank-shaft with bearing on each side of crank, possesses many advantages over the earlier types, and we believe its compact form and low price will commend it for almost innumerable uses. When so ordered, we can furnish with crosshead or guide (in place of plunger and lower valve), thus adapting it for operating a cylinder (see pages 68 and 69) in wells where water stands more than twenty-five feet below the Pump. Pump, thus arranged with crosshead, furnished at price of regular pump, but the deep well cylinder costs extra. Fig. 1205 differs from Fig. 1204, described above, only in that it has tight and loose pulleys. This Pump is largely used in creameries and milk stations, wherever it is desired to force liquids to elevations of fifty feet or less. Arrangement of plunger and valve is as shown in sectional view of Fig. 1204. Can be made for deep wells, same as Fig. 1204, and same remarks apply.

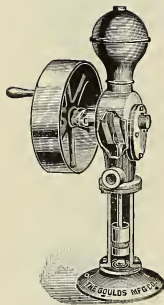


Fig. 1204

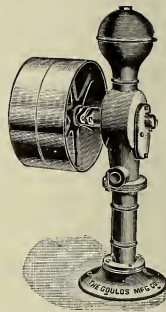


Fig. 1205

Fig. 1204. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	Pulleys, Each	*Lift and Force	Cipher	Price
4	3 in.	6 in.	.18 gal.	1 1/4 in. pipe	1 1/4 in. pipe	15 x 3 in.	50 ft.	Warett	\$27.00
6	3 1/2 "	6 "	.25 "	1 1/2 "	1 1/2 "	15 x 3 "	50 "	Wareul	30.00

Fig. 1205. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	Pulleys, Each	*Lift and Force	Cipher	Price
4	3 in.	6 in.	.18 gal.	1 1/4 in. pipe	1 1/4 in. pipe	15 x 3 in.	50 ft.	Warevz	\$32.00
6	3 1/2 "	6 "	.25 "	1 1/2 "	1 1/2 "	15 x 3 "	50 "	Warewy	35.00

*Total lift and force from supply to point of delivery Pump not more than 25 feet above water. Hot water must flow to Pump.

Goulds Hand Boiler Feed Pumps

With Brass-Fitted Globe Check Valve

Fig. 289 represents a Hand Boiler Feed Pump on plank, for feeding cold boilers or those under moderate steam pressure, as 40 to 60 pounds. It is also well adapted for supplying feed water to boilers employed for making steam for heating only, etc.

The Pumps are supplied with brass-fitted globe check valve on discharge, preventing water from returning to Pump. They have brass plunger leather packed and brass lower valve, adapting them for pumping hot as well as cold water. Where Pumps must handle hot water, we always advise placing them under flooded suction.

These Pumps are heavy and substantial in build, having revolving bearer, brass gland and brass-cased piston rod, and must not be confused with cheaper Pumps of this class.

Fig. 495 is built on same lines as Fig. 289, described above, except that it is a Base Pump. It is designed for the same range of duty.

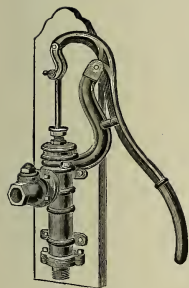


Fig. 289

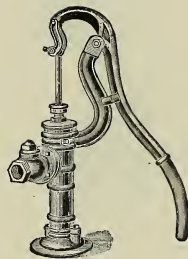


Fig. 495

Fig. 289. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	Equivalent Pressure	Cipher	Price
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	120 ft.	51 lbs.	Digit	\$12.00
2	2½ "	6 "	.13 "	1¼ "	1¼ "	90 "	38 "	Dikes	14.00
4	3 "	6 "	.18 "	1¼ "	1¼ "	60 "	25 "	Dim	16.00

Fig. 495. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	*Lift and Force	Equivalent Pressure	Cipher	Price
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	120 ft.	51 lbs.	Headok	\$12.00
2	2½ "	6 "	.13 "	1¼ "	1¼ "	90 "	38 "	Healed	14.00
4	3 "	6 "	.18 "	1¼ "	1¼ "	60 "	25 "	Heaps	16.00

*Total lift and force from supply to point of delivery, Pump not more than 15 feet above water. Hot water must flow to Pump.

Goulds Plunger Boiler Feed Pump

With Column and Single Pulley for Hand or Machine Power

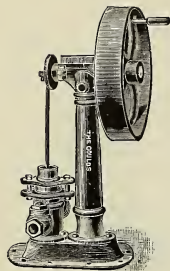


Fig. 482

Fig. 482 represents our Power Boiler Feed Pump on bed plate, with column, crank shaft and face plate, with single pulley, for hand or machine power. Capable of handling hot water as well as cold.

Pump has general application for feeding cold boilers or those under moderate steam pressure. Has special bronze check valves and outside-packed plunger.

We always recommend shortest possible suction pipe with Boiler Feed Pump, as it lessens the danger of losing its priming.

Fig. 482. Sizes, Prices, Etc.

No.	Dia. of Cyl.	Stroke	Capacity per Min., 60 Strokes	Suction	Discharge	*Lift and Force	Equivalent Pressure	Pulley	Cipher	Price
0	2 in.	3 in.	2.45 gal.	1 in. pipe	1 in. pipe	120 ft.	60 lbs.	16 x 3 in.	Gull	\$35.00
2	2½ "	3 "	3.82 "	1 "	1 "	90 "	45 "	18 x 4 "	Gullyx	37.50
4	3 "	3 "	5.51 "	1¼ "	1¼ "	60 "	30 "	20 x 4 "	Gulps	40.00

*Total lift and force from supply to point of delivery, Pump not more than 15 feet above water. Hot water must flow to Pump.

Goulds Plunger Boiler Feed Pump

With Column and Two Pulleys, for Hand or Machine Power

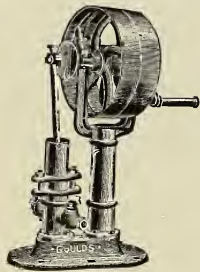


Fig. 484

Fig. 484 represents improved pattern of Power Boiler Feed Pump with crank shaft, face plate, tight and loose pulleys, for hand or machine power. On the end of driving shaft opposite the face plate is a heavy iron crank with wrought-iron handle for working Pump when necessary.

Pumps may be employed for feeding steam boilers under moderate pressure, or any other service within limits cited in our table below.

Has special bronze check valves and outside-packed plunger and is capable of handling hot water.

Fig. 484. Sizes, Prices, Etc.

No.	Dia. of Cylinder	Stroke	Capacity per Min., 60 Strokes	Suction	Discharge	*Lift and Force	Equivalent Pressure	Pulley	Cipher	Price
0	2 in.	3 in.	2.45 gal.	1 in. pipe	1 in. pipe	120 ft.	60 lbs.	16 x 3 in.	Hairs	\$40.00
2	2½ "	3 "	3.82 "	1 "	1 "	90 "	45 "	16 x 3 "	Haily	42.50
4	3 "	3 "	5.51 "	1¼ "	1¼ "	60 "	30 "	16 x 3 "	Halfs	45.00

*Total lift and force from supply to point of delivery, Pump not more than 15 feet above water. Hot water must flow to Pump.

Goulds Plunger Boiler Feed Pump

With Stub End for Machine Power

Fig. 292 represents our Power Boiler Feed Pump for supplying steam boilers with water against any pressure. The globe check valves are made of separate castings, faced off and bolted on the body of Pump, thus making a tight-packed joint. The valve seats are made of best bronze and screwed into the iron castings, and can therefore be removed when worn out and new ones inserted. The valve itself is also of bronze. The stuffing-box, top of piston and stub end are finished bright and polished.

Fig. 292. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Minute, 60 Strokes	Suction	Discharge	*Lift and Force	Equiv. Pressure	Cipher	Price
00	1½ in.	9 in.	4.13 gal.	1 in. pipe	1 in. pipe	250 ft.	107 lbs.	Dimed	\$30.00
0	2 "	9 "	7.35 "	1¼ "	1¼ "	250 "	107 "	Dimal	35.00
2	2½ "	9 "	11.47 "	1½ "	1½ "	250 "	107 "	Dine	40.00
4	3 "	9 "	16.52 "	1½ "	1½ "	250 "	107 "	Dingy	50.00

*Total lift and force from supply to point of delivery, Pump not more than 15 feet above water. Hot water must flow to Pump.

See notes on Feed Water for Boilers, page 224.

Goulds Plunger Boiler Feed Pump

With Stub End for Machine Power

Fig. 485 represents Power Boiler Feed Pump with trunk plunger, which we offer in several sizes given below. Suction and discharge brass check valves are screwed into opposite sides of cylinder. This cheap yet serviceable Pump has general application for feeding steam boilers under moderate pressure, or for any limit duty indicated in our tables.

Fig. 485. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Minute, 60 Strokes	Suction	Discharge	*Lift and Force	Equiv. Pressure	Cipher	Price
2	1¼ in.	6 in.	1.27 gal.	¾ in. pipe	¾ in. pipe	150 ft.	64 lbs.	Halls	\$10.00
3	1½ "	6 "	1.84 "	1 "	1 "	150 "	64 "	Halor	15.00
4	1½ "	3 "	1.37 "	¾ "	¾ "	150 "	64 "	Halt	14.00
5	2 "	3 "	2.45 "	1 "	1 "	120 "	51 "	Hames	18.00
6	2½ "	3 "	3.82 "	1 "	1 "	90 "	38 "	Hands	22.00
7	3 "	3 "	5.50 "	1¼ "	1¼ "	60 "	25 "	Hank	27.00
8	3 "	6 "	3.26 "	1¼ "	1¼ "	120 "	51 "	Hard	22.00
9	2½ "	6 "	5.10 "	1¼ "	1¼ "	90 "	38 "	Hares	30.00
10	3 "	6 "	7.35 "	1½ "	1½ "	120 "	51 "	Harks	40.00

*Total lift and force from supply to point of delivery, Pump not more than 15 feet above water. Hot water must flow to Pump.

See notes on Feed Water for Boilers, page 224.

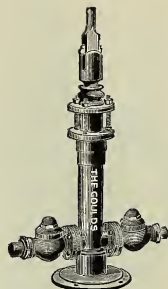


Fig. 292

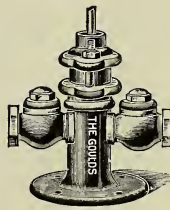


Fig. 485

“Royal” Steam Boiler Feed Pump

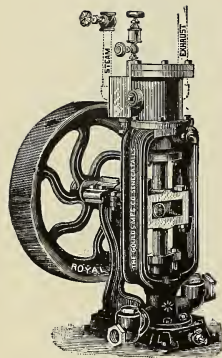


Fig. 1395

The “Royal” Steam Boiler Feed Pump has many points of merit in its arrangement, construction and proportions not found in any other pumps.

The main or frame casting, with supporting arm, is all in one piece, so that the shaft revolves in perfectly rigid bearings, while the eccentric connection works in a vertical line, without any lateral pressure on the valve rod to heave and pull the steam chest, cramp the rod and create friction. The cylinder heads have ground surfaces; the space between cylinder and chest is tapped on either side for the exhaust steam pipe, and the brass globe check valves are each designated “suction” or “discharge” for convenience, and can be connected on either side of Pump if necessary. If water is to be raised by suction, put a foot valve and strainer on end of suction pipe and make all joints tight.

Engineers all say that the GOULD “ROYAL” is the most substantial, best proportioned and modern in its general construction and arrangement of parts, of any of the large number of Single-Acting Boiler Feed Pumps, and always give it the preference over all others.

With each Pump we furnish Throttle Valve, Oil Cup and Let-Off Plugs.

The table below will give a full description of capacity, prices, etc., of these Pumps.

Fig. 1395. Sizes, Prices, Etc.

No.	Diameter Steam Cylinder	Diameter Water Plunger	Stroke	Steam	Exhaust	Suction and Discharge	Rev. per Minute	Capacity per Minute	*Lift and Force	Equiv. Pressure	Cipher	Price
1	3 in.	1 $\frac{3}{8}$ in.	3 in.	$\frac{3}{8}$ in. pipe	$\frac{3}{4}$ in. pipe	1 in. pipe	100	1.93 gal.	200 ft.	100 lbs.	Sagot	\$44.00
2	3 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "	3 "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1 "	100	3.12 "	200 "	100 "	Sailor	55.00
3	4 "	2 $\frac{1}{4}$ "	4 "	$\frac{3}{4}$ "	1 "	1 $\frac{1}{4}$ "	90	6.20 "	200 "	100 "	Sakels	70.00
4	4 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	4 "	$\frac{3}{4}$ "	1 "	1 $\frac{1}{2}$ "	85	8.75 "	200 "	100 "	Salad	82.50
5	5 "	3 $\frac{1}{2}$ "	4 "	$\frac{3}{4}$ "	1 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "	80	13.33 "	200 "	100 "	Saleso	110.00
6	6 "	4 "	5 "	1 "	1 $\frac{1}{2}$ "	2 "	75	21.75 "	200 "	100 "	Salty	154.00

* Total lift and force from supply to point of delivery, Pump not more than 15 feet above water. Hot water must flow to Pump.

Pumps with brass-lined cylinder and brass-cased plunger add to list No. 1, \$8.00; No. 2, \$10.00; No. 3, \$12.50; No. 4, \$16.00; No. 5, \$21.00; No. 6, \$30.00.

Goulds Soda Water Pressure Pump

For Hand or Power Use

Fig. 1086, Soda Water Pressure Pump, has frame cylinder support and plunger rod guide cast in one piece, this form of construction insuring proper alignment of the working parts.

The frame supports shaft, with connecting rod, and carries on one end tight and loose pulleys, and on other balance wheel with handle.

Pump has bronze cylinder, plunger and valves.

It may also be used for boiler testing or any pumping service where the pressure does not exceed 200 lbs.

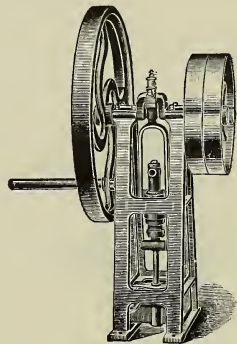


Fig. 1086

Fig. 1086. Size, Price, Etc.

Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	Working Pressure	Balance Wheel	Pulleys	Cipher	Price
1½ in.	6 in.	.05 gal.	¾ in. pipe	¾ in. pipe	200 lbs.	36x3½ in.	20x3 in.	Rudehi	\$100.00

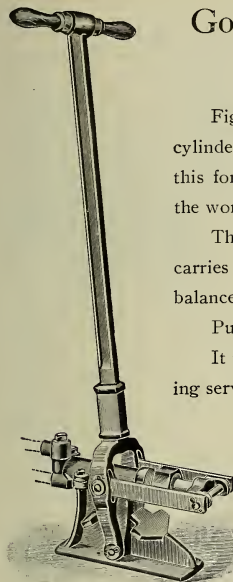


Fig. 1342

Goulds Bronze Soda Water Pressure Pump

Fig. 1342 is a very compact and powerful Pump requiring but little floor space.

Base and lever socket are cast iron, lever malleable iron with wood handle, links wrought iron. The cylinder, plunger, gland and valves are bronze, and all working parts are easily accessible. This Pump is designed for pumping water into soda water tanks and carbonating apparatus under heavy pressure and may be used for boiler testing and similar service up to the limit of its working pressure, 200 lbs.

Fig. 1342. Size, Price, Etc.

Diameter Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	Working Pressure	Cipher	Price
1¼ in.	5 in.	.03 gal.	½ in. pipe	½ in. pipe	200 lbs.	Virgko	\$20.00

Goulds Hydraulic Pressure or Test Pump

For Testing Boilers, Pipes, Etc.

Fig. 867 represents a new Hydraulic Pressure or Test Pump, of compact build and of commensurate strength for work for which it is designed.

It has a revolving top, admitting its being worked in any position, and a sectional lever, which can be changed to give greatest leverage. The suction and discharge valves (flanged and bolted to cylinder) are of a new and improved type, with brass valve seats, poppets and caps. The Pump should be placed within short suction distance of water, or on a level with it, and will be found invaluable to the boilermaker, or user, for testing the condition of boilers, vessels, etc., for cleaning out pipes, etc.

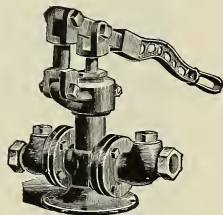


Fig. 867

Fig. 867. Sizes, Prices, Etc.

No.	Diameter Ram	Stroke	Suction and Dis.	Working Pressure	Cipher	Price
0	¾ in.	5 in.	1 in. pipe	700 lbs.	Webbed	\$18.50
1	1 " "	5 " "	1 " "	550 " "	Webbery	19.00
2	1¼ " "	5 " "	1 " "	400 " "	Webby	19.50
3	1½ " "	5 " "	1 " "	200 " "	Wedah	20.00

Can furnish with strong wood barrow, with cast-iron tank underneath, at \$10.00 extra list.

Goulds High Service Pressure or Test Pump

For Testing Boilers, Tanks, Etc.

Fig. 941 is designed to supply the demand for a Test Pump, capable of generating any desired pressure up to 6,000 pounds per square inch. The body or cylinder, as well as ram, is of steel, the valves of best gun metal and the lever forged from wrought-iron. In short, we have sacrificed nothing that would contribute to the strength and efficiency of this Pump, and the results have vindicated our policy. Our table of dimensions, given below, further illustrates the compactness and power of our Pump.

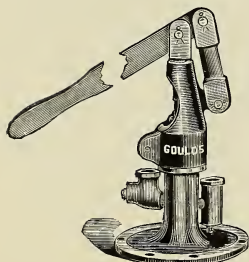


Fig. 941

Fig. 941. Size, Price, Etc.

Diameter Ram	Stroke	Suction and Dis.	Working Pressure	Cipher	Price
½ in.	2 in.	¼ in. pipe	6000 lbs.	Wetish	\$30.00

Goulds Hydraulic Test Pump

With Cast-Iron Tank

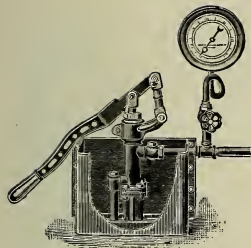


Fig. 789

Fig. 789 illustrates our new Gun Metal Test Pump, for testing boilers, tanks, pipes, etc., to one thousand pounds pressure per square inch, if necessary. As the cistern only holds about two gallons of water, the thing to be tested should first be filled by other means and the tester then applied to supply the balance and work up the pressure.

Everything is made first-class in all respects. Weight about forty pounds.

Fig. 789. Size, Price, Etc.

Complete with $\frac{7}{8}$ -inch piston and delivery pipe screwed for $\frac{1}{2}$ -inch gas pipe coupling, (Wedder).....	\$30.00
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This price does not include Test Gauge, Valve or Fittings, which will be supplied of any desired size or style at lowest market rates.

Plumbers' Brass Force Pumps

In Fig. 1035 we show our new Plumbers' Brass Force Pump, which may be operated at any pressure up to 100 lbs. per square inch. For removing obstructions in waste or water pipes, Pump is placed in vessel of water and pipe to be cleared connected to Pump by hose. For this purpose we furnish three feet of hose and conical tip, that may be readily connected to any ordinary size pipe.

Pump is very compact and may easily be carried in sack of plumbers' tools, etc.

Fig. 1035. Size, Price, Etc.

1-inch Diameter Cylinder, 16-inch Stroke (Baldwin)....	\$7.00
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Plumbers' Brass Force Pump

Fig. 322 represents our Plumbers' Force Pump for removing obstructions in waste and water pipes. All working parts are brass. Discharge is furnished with brass-cased check valve and fitted for hose coupling. In operating this Pump, a hose is connected to pipes to be cleared and Pump is set in vessel of water.

Fig. 322. Size, Price, Etc.

No.	Dia. Cyl.	Stroke	Capacity per Stroke	Discharge	Cipher	Price
0	2 in.	5 in.	.07 gal.	$\frac{3}{4}$ in. hose	Dusty	\$7.00

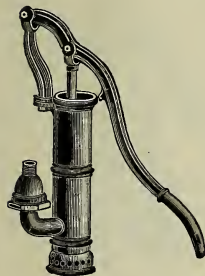


Fig. 322

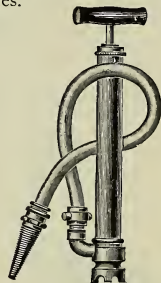


Fig. 1035

Goulds Gas Fitters' Proving Pump

With Spring or Mercury Gauge

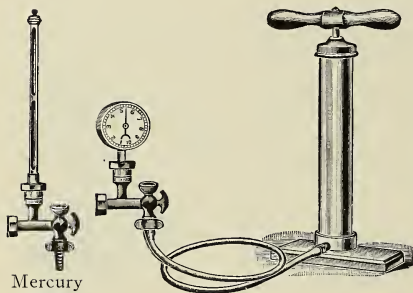


Fig. 1065

Fig. 1065 shows our Gas Fitters' Proving Pump, with Spring Gauge. It affords the best known means of testing pipes. We price below Pump only, also complete with Spring or Mercury Gauge and Hose, as shown in engraving, if wanted.

Fig. 1065. Size, Price, Etc.

No.	Diameter Cylinder	Stroke	Displacement per Stroke	Discharge	Cipher	Brass Pump Only
0	2 in.	10 in.	31 cu. in.	¾ in. hose	Dabcer	\$12.00

Pump with Spring Gauge (or Mercury Gauge as ordered), Ether Cup, Cock and Hose Complete.....						
Spring Gauge.....						\$25.00
Mercury Gauge.....						10.00
Ether Cup and Cock.....						5.00
Hose per foot.....						.25

Gas Companies' and Plumbers' Drip Pump

Fig. 323 is our Plumbers' and Gas Companies' Drip Pump, for extracting the water from gas drips. These Pumps have brass cylinders, brass plunger, valve and plunger rod, glands, etc. Suction is regularly fitted for wrought-iron pipe, unless otherwise ordered.

Fig. 323. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Suction	Cipher	Price
0	2 in.	9 in.	¾ in. pipe	Dutch	\$12.00
2	2½ in.	9 in.	¾ in. pipe	Chesteg	16.00

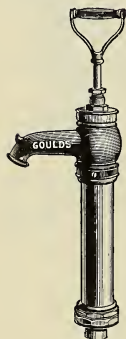


Fig. 323

Goulds "Magic" Ham-Curing Pump

Fig. 922 represents our "Magic" Ham-Curing Pump. All working parts are brass, including double-crimp packed plunger, valves and seats. We furnish with this Pump 3 feet of ½-inch rubber suction and discharge hose and nickel-plated needle point. The office of the Pump is to thoroughly impregnate the ham with a suitable preparation or pickle, thus curing it more quickly and better, in any season, than by the old process.

Pump has 2-in. cyl. 5-in. stroke. (Wevill) \$15.00.

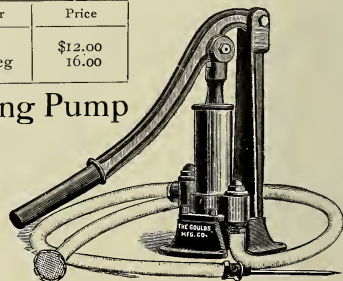


Fig. 922

Goulds "New Lightning" Air Pressure Pump

For Hand Use

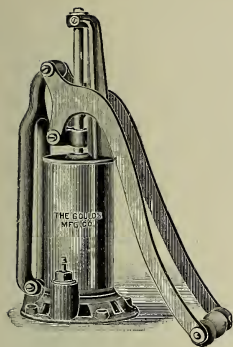


Fig. 1210

Fig. 1210, "New Lightning" Air Pressure Pump, has improved form of piston and valves with reduced clearances; also more powerful leverage. The practically perfect cylinder can only be had in the cast body, finished to accurate size. Ours is in one piece with base, to obviate possibility of leakage at this point. The piston and valves are finished with a view of obtaining the highest efficiency. The compound lever is of new form, permitting best possible application of power and rendering the work comparatively easy.

We offer as a strictly high class Pump, designed to meet the demand for the best.

Fig. 1210. Size, Price, Etc.

Diameter Cylinder	Stroke	Displacement per Stroke	Discharge	Working Pressure	Cipher	Price
3¾ in.	5½ in.	45.6 cubic in.	¾ in. hose	100 lbs.	Twiddle	\$10.00

Goulds Double-Acting Gas or Air Pump

For Gas or Oil Wells

Fig. 1130, Double-Acting Gas or Air Pump, is designed for use in gas and oil regions, for relieving the back pressure from oil wells or supplying boilers with gas from non-flowing wells.

Cylinder is cast iron with iron piston, metallic spring packed. The suction valves, placed upon one side of Pump and discharge valves upon opposite side, are bronze, leather faced, and easy of access. Pump is furnished, complete, with forked coupling and yoke for wood rod of walking beam.

Fig. 1130. Size, Price, Etc.

Diameter Cylinder	Stroke	Displacement Free Air per Revolution	Suction	Discharge	Cipher	Price
14 in.	20 in.	6152 cubic in.	2 in. pipe	2 in. pipe	Waltab	\$125.00

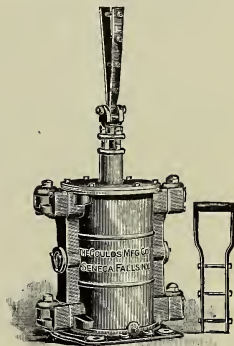


Fig. 1130

Goulds Brass Pressure or Vacuum Pump

Mounted on Plank, With Wrought-Iron Lever

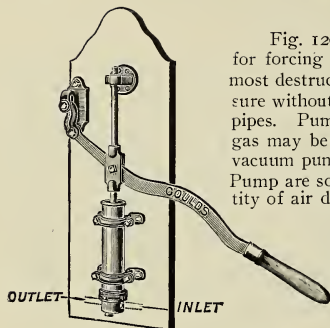


Fig. 1203

Fig. 1203 represents a Brass Air or Vacuum Pump of proper construction for forcing air or gas into barrels, casks or other vessels. In this manner the most destructive acids, such as nitric, sulphuric, etc., may be raised by air pressure without coming in contact with Pump, or in fact anything except conveying pipes. Pump has cup leather packed plunger, and is so constructed that air or gas may be pumped with minimum loss. It may be used as a pressure or as a vacuum pump, as desired. Inlet and outlet are at the bottom. The uses of an Air Pump are so various, that we prefer to know for what it is to be employed, quantity of air desired, etc.

Fig. 1203. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Displacement per Stroke	Inlet	Outlet	Maximum Pressure	Cipher	Price
0	2 in.	6 in.	22 cubic in.	$\frac{3}{8}$ in. pipe	$\frac{3}{8}$ in. pipe	75 lbs.	Glasson	\$15.00
000	1½ "	10 "	17 " "	$\frac{1}{4}$ in. pipe	$\frac{1}{4}$ in. pipe	125 "	Glassub	30.00

Goulds Brass Pressure or Vacuum Pump

Mounted on Plank, With Crank Shaft and Fly-Wheel

Fig. 1209 is substantially the same as Fig. 1203, described above, and adapted for the same purposes. Where any amount of pressure is required, it will be generated much easier with the aid of Crank Shaft or Fly-Wheel than with lever.

We might also say that this style of Pump is extensively used for pumping air into beer casks and raising the liquid without aid of other appliances.

Fig. 1209. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Displacement per Stroke	Inlet	Outlet	Maximum Pressure	Cipher	Price
0	2 in.	6 in.	22 cubic in.	$\frac{3}{8}$ in. pipe	$\frac{3}{8}$ in. pipe	75 lbs.	Waraho	\$28.00
000	1½ "	7 "	17 " "	$\frac{1}{4}$ "	$\frac{1}{4}$ "	125 "	Waraid	43.00

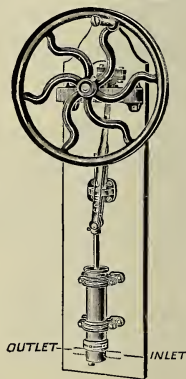


Fig. 1209

Goulds Air Pressure or Vacuum Pumps

For Hand or Machine Power

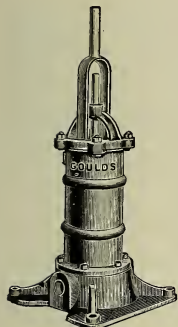


Fig. 605

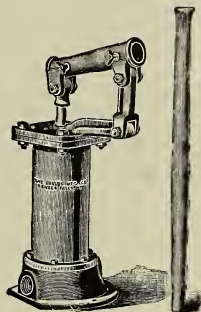


Fig. 1096

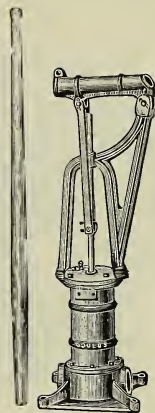


Fig. 772

Air Pumps, shown above, are equally adapted for pumping against pressure or creating vacuum. When ordering, state for which purpose desired. Pumps are made with inside valves, thereby reducing clearances to a minimum.

Fig. 605 is arranged with stub end for power connection. Fig. 772 is similar to Fig. 605, but arranged for hand pumping. Fig. 1096 is hand pump, somewhat lighter and cheaper.

Fig. 605. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Displacement Free Air per Stroke	Inlet	Outlet	*Working Pressure	Cipher	Price
16	6 in.	12 in.	.20 cubic ft.	1 1/4 in. pipe	1 1/4 in. pipe	75 lbs.	Moore	\$35.00
24	8 "	12 "	.34 " "	1 1/2 " "	1 1/2 " "	75 "	Clubo	45.00

Fig. 1096. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Displacement Free Air per Stroke	Inlet	Outlet	*Working Pressure	Cipher	Price
16	6 in.	10 in.	.16 cubic ft.	1 1/4 in. pipe	1 1/4 in. pipe	30 lbs.	Gruhal	\$30.00
24	8 "	10 "	.29 " "	1 1/2 " "	1 1/2 " "	30 "	Gruhed	40.00

Fig. 772. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Displacement Free Air per Stroke	Inlet	Outlet	*Working Pressure	Cipher	Price
16	6 in.	12 in.	.20 cubic ft.	1 1/4 in. pipe	1 1/4 in. pipe	50 lbs.	Viary	\$40.00
24	8 "	12 "	.34 " "	1 1/2 " "	1 1/2 " "	50 "	Dashed	50.00

*For intermittent service.

Goulds Air Pressure and Vacuum Pump

For 100 lbs. Pressure, Intermittent Service

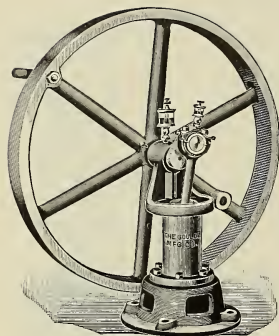


Fig. 1176

Fig. 1176 shows an Air Pump of considerable capacity. It is provided with heavy balance wheel for hand or belt drive, making its operation easy and uniform. Wheel has two handle bosses, by which the leverage can be varied according to the pressure required. The valves, which are contained within its base, are of brass. Piston is metal, ring packed, so constructed as to automatically take up the wear. Pump is built strong and substantial in every way. Clearances are reduced to a minimum, and it will be found a most effective and satisfactory Pump when used as pressure Pump. Suction is fitted for pipe and Pump will be found equally effective for creating vacuum.

Fig. 1176. Size, Price, Etc.

Diameter	Stroke	Displacement Free Air 150 Revs.	Maximum Pressure	Suction and Discharge	Pulley	Cipher	Price
3 in.	4 in.	2.4 cubic ft.	100 lbs.	½ in. pipe	30 x 3 in.	Flushy	\$35.00

Power Air Pressure and Vacuum Pump

Water-Jacketed for 125 lbs. Pressure, Continuous Service

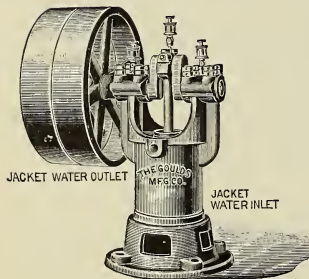


Fig. 1193

Fig. 1193, Air Pump, is modeled on same lines as Fig. 1176, described above, with the addition of water jacket around cylinder and tight and loose pulleys for power. The water jacket allows a free circulation of cold water around cylinder, keeping it cool and adapting the Pump for continuous, heavy service. Valves are of brass; plunger is metal, ring packed.

Fig. 1193. Sizes, Prices, Etc.

Diameter	Stroke	Maximum Speed and Displacement per Minute	Pipe Connections	Pulleys	Cipher	Price
3 in.	4 in.	150 rev., 2.4 cubic ft.	½ in. pipe	15 x 3 in.	Flushwo	\$65.00
4 "	5 "	100 " 3.6 "	½ "	24 x 4 "	Taolo	100.00
5 "	6 "	100 " 6.8 "	1 "	30 x 5 "	Taoms	150.00

Power Air Pressure and Vacuum Pump

For 30 Pounds Pressure, Intermittent Service

Fig. 1335, Single-Acting Power Air Compressor and Vacuum Pump, for pressures up to 30 pounds. It is used in connection with sprinkler systems, for pneumatic tires, and for other intermittent work. It is not water-jacketed and should not be run continuously at pressures liable to cause injurious heating.

Piston is iron with cup leather packing. Valves work vertically, insuring true seating, minimum wear and minimum clearance. Steel crank shaft. Babbitted bearings. Sight-feed oil cups.

Fig. 1335. Sizes, Capacities, Prices, Etc.

PISTON		Maximum Speed and Displacement per Minute	Inlet and Discharge Pipes	Tight and Loose Pulleys	Cipher	Price
Diameter	Stroke					
4 in.	4 in.	150 revs., 4.3 cubic ft.	½ in.	15 x 3 in.	Voidaob	\$40.00

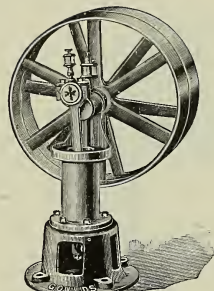


Fig. 1335

Air Pressure and Vacuum Pump

Water-Jacketed for 125 Pounds Pressure, Continuous Service

Fig. 1383, Single-Acting Power Compressor and Vacuum Pump, for pressures up to 125 pounds. The cylinder is water-jacketed, enabling it to run cool when pumping continuously at maximum pressure and speed.

Piston is iron with iron spring ring packing. Valves work vertically, insuring true seating, minimum wear and minimum clearance. Steel crank shaft. Babbitted bearings. Sight-feed oil cups.

Fig. 1383. Sizes, Capacities, Prices, Etc.

PISTON		Maximum Speed and Displacement per Minute	SIZES OF PIPE		Pulley	Cipher	Price
Diam.	Stroke		Air Inlet and Outlet	Water Jacket Inlet and Outlet			
3 in.	4 in.	150 revs., 2.4 cubic ft.	½ in.	½ in.	30x3 in.	Vogyep	\$65.00
4 "	5 "	100 " 3.6 " "	½ "	½ "	36x4 "	Vohab	100.00
5 "	6 "	100 " 6.8 " "	1 "	1 "	42x5 "	Voheel	150.00

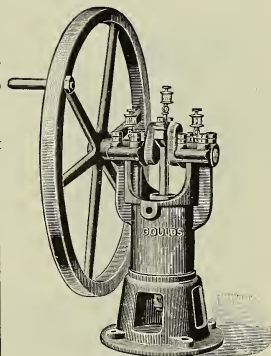


Fig. 1383

Power Air Pressure and Vacuum Pump

For 30 lbs. Pressure, Intermittent Service

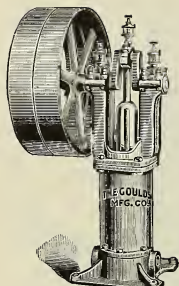


Fig. 1029

Fig. 1029 represents our Air Pressure or Vacuum Pump, with crank shaft, pitman and guide, arranged with tight and loose pulleys for power.

These Pumps have a general application for forcing air into receivers to agitate liquids, and are also used in connection with the dry-pipe sprinkler system in mills and factories. It may also be used for any purpose where a vacuum is required. Maximum speed is 150 R. P. M.

Fig. 1320 comprises two Fig. 1029 mounted on a common Bed Plate.

Sizes, Prices, Etc.

Fig.	PLUNGER		Displacement Free Air 150 Revolutions	Inlet and Outlet	Tight and Loose Pulleys	Cipher	Price
	Diameter	Stroke					
1029	6 in.	8 in.	19.5 cubic ft.	1 3/4 in. pipe	24 x 4 in.	Banjo	\$80.00
1320	6 "	8 "	39. " "	1 3/4 "	26 x 6 "	Dintop	175.00

Power Air Pressure and Vacuum Pump

Water-Jacketed for 125 lbs. Pressure, Continuous Service

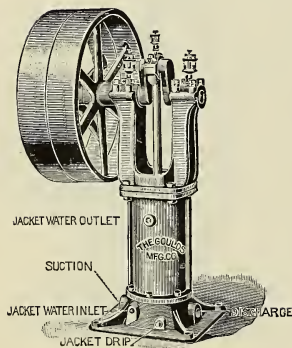


Fig. 1190

Fig. 1190 shows one of our water-jacketed Air Pressure Pumps arranged with tight and loose pulleys for power. By means of the water-jacket, cold water may be circulated around the cylinder, preventing it from heating when working under heavy, constant pressure. The tight or driving pulley is made extra heavy and acts as a fly-wheel, producing uniform action of parts. Piston is metal, ring packed. This Pump is well adapted for high, continuous pressure and from its construction and capacity has a varied range of service. It may be used equally as well for a Vacuum Pump as an Air Compressor. It should always be specified for what purpose it is intended. May be operated at 150 revolutions per minute and 125 pounds pressure.

Fig. 1403 is made up of two Fig. 1190 mounted on a common Bed Plate.

Sizes, Prices, Etc.

Fig.	Dia.	Stroke	Dis. Free Air 150 Rev.	Suction	Dis- charge	Water Jacket Inlet and Outlet	Tight and Loose Pulleys	Cipher	Price
1190	3 in.	8 in.	4.9 cu. ft.	1 in. pipe	3/4 in. pipe	3/8 in. pipe	24 x 4 in.	Flushon	\$100.00
1403	3 in.	8 in.	9.8 " "	1 " "	3/4 " "	1/2 " "	26 x 6 "	Diplot	215.00

Goulds Portable Brass Force Pump



Fig. 561½

Fig. 561½ represents our “Premier” Brass Bucket Pump, arranged with suction and discharge hose and Spray Nozzle. With this Nozzle a solid stream may be thrown, or a fine spray. Pump has brass cylinder, plunger and rod. Pump is particularly adapted for washing windows and wagons, spraying flowers in conservatories, gardens, etc. Its weight is only 13 pounds.

Fig. 561½. Price.

With 2½ feet ¾-inch suction and 3 feet ¾-inch discharge hose,
Spray Nozzle and Strainer.....(Velveub) \$7.50

Goulds “Bordeaux” Brass Bucket Pump

Fig. 1129, “Bordeaux” Brass Garden and Spray Pump, is especially designed for spraying in gardens and greenhouses. The Pump is double-acting in effect, has gutta percha ball valves, proof against the action of acids and oils. Foot piece is malleable iron. The pump end of discharge hose is wire wound, adding largely to its durability. Our “Seneca” nozzle is furnished with Pump. Pump has no suction hose, but is set in pail or bucket with foot-rest outside.

Fig. 1129. Price.

With 3 feet ¾-inch discharge hose and Spray Nozzle.....(Wathug) \$6.00



Fig. 1129

Combination Knapsack Spray Pump

For Vineyard, Greenhouse or Field Service

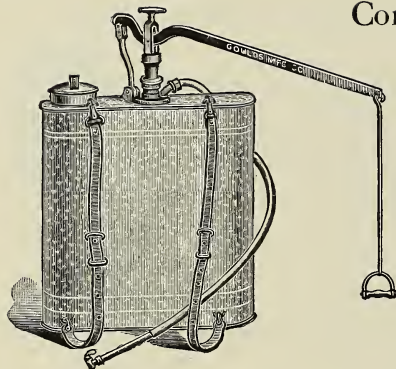


Fig. 1323

Fig. 1323 consists of a galvanized iron tank and a small brass Pump. It is provided with straps for carrying on the back, or may be used as a bucket sprayer, by removing the long lever and operating Pump by handle at top.

Lever is adjustable to right or left hand.

Pump has brass valves, wing guided, and brass valve seats each accurately ground to fit.

Reservoir will hold about five gallons and has removable metal strainer at filling hole.

Especially useful in greenhouses, vineyards and all other places where a barrel or power sprayer cannot be conveniently operated.

Size, Price, Etc.

Fig. 1323 as shown in cut with 4 feet of $\frac{3}{8}$ -inch discharge hose, "Seneca." Nozzle and pipe extension (Zirdkt) \$10.00



Fig. 1068

Goulds Brass Pump and Bucket

Fig. 1068 represents a Brass Spray Pump, Fig. 1129, fitted into a galvanized iron bucket, and thus arranged will be found very convenient for carrying about. Capacity of bucket is between 5 and 6 gallons.

Fig. 1068. Price.

With 5 feet of $\frac{3}{8}$ -inch discharge hose and Spray Nozzle.....(Dripus) \$9.00

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

Goulds "Handy" Knapsack Pump

For Vineyard, Orchard or Field Service

Fig. 989 represents our Knapsack Spray Pump, made entirely of brass and copper, with ball valves and metal plunger, all of which are easily accessible.

The discharge is at the bottom, and the pump can be entirely drained of the liquid. Any leakage of fluid out of the stuffing-box will drip back into the tank. The change from the right to the left hand is simple, and made by disconnecting the bearer link and bringing it over to the jaw, provided for it on the other side.

An eye on the top and back of the knapsack enables one to suspend it steadily, when he wishes to take it off his back. It should be carried on back *with the straps crossed in front*. The reservoir is made of heavy copper, and will hold about five gallons of liquid. Special Agitator, 50 cents extra net.

Fig. 989. Size, Price, Etc.

Fig. 989. "Handy" Knapsack Sprayer, complete as shown in cut, with $3\frac{1}{2}$ feet of $\frac{3}{8}$ -inch discharge hose, "Vermorel" Nozzle and Lance for degorger.....(Wrybill) \$15.00

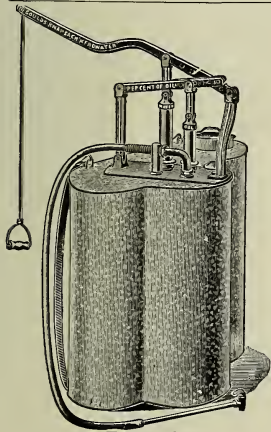


Fig. 1263

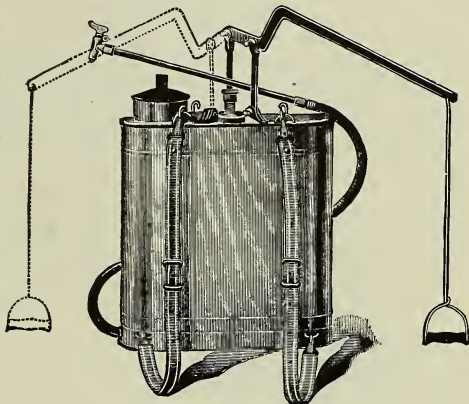


Fig. 989

Goulds Knapsack "Kerowater."

For Emulsifying and Spraying Kerosene and Water

(Patented March 7, 1899.)

Many conditions are encountered, under which our barrel "Kerowater" cannot be advantageously operated, as in greenhouses, work on side hills, etc. For these purposes we have designed our Fig. 1263, Knapsack "Kerowater."

It embodies the same principle as described under Fig. 1187, page 251 and consists of two independent Pumps, operated by a common lever, placed in a galvanized iron tank, with divisions for oil and water. Combined capacity about 5 gallons. Quantity of oil used is controlled by adjustment of a single pin, and may be varied to 5, 10, 15, 20 or 25 per cent. Pump may be operated by either hand, by changing lever to right or left.

Fig. 1263. Price, Etc.

Fig. 1263. Knapsack "Kerowater," complete as shown in cut, with 4 feet of $\frac{3}{4}$ -inch discharge hose, "Seneca" Nozzle and Pipe Extension, 12 inches long.... (Zirdfe) \$12.00

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

Goulds "Standard" Double-Acting Spray Pump

With Brass-Lined Cylinder and Brass-Cased Differential Plunger

Fig. 905 is a strong Double-Acting Spray Pump, with brass-lined cylinder and brass cased differential plunger, specially adapting it for diffusing poisonous mixtures such as Bordeaux, Paris Green, Copper Sulphate, etc., upon the trees, vines and bushes. The differential plunger forms the air chamber and contributes to sustaining a continuous and uniform discharge at spray nozzles. The base is adapted for either end or side of barrel. Lever is extra long and strong. Pump has two discharges cut for pipe, but when ordered without hose or spray nozzles, we plug one opening and fit the other with brass bushing and half coupling for hose. Also supply brass suction strainer. Prices do not include barrel. Pump regularly fitted with metallic lower valve.

Dash Agitator, Fig. 1079. see outline cut, \$1.25 extra list.

Mechanical Agitator, Fig. 1321. see outline on next page, \$1.50 extra list.

For Nozzles, Extensions, Etc., see pages 255 to 258.

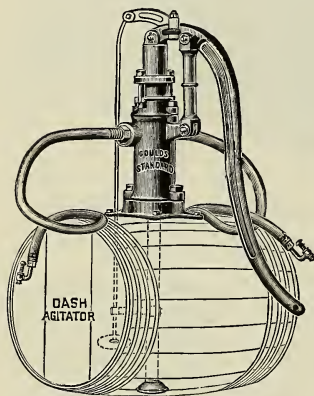


Fig. 905

Fig. 905. Sizes, Prices, Etc.

	No.	Dia. Outer Cyl.	Suction	Double Discharge	Cipher	Brass Lined
Pump with Strainer and Hose Coupling.	2	2½ in.	1 in. pipe	½ in. hose and ¾ in. pipe	Waspfly	\$8.50
	4	3 "	1¼ in. pipe	¾ in. hose and 1 in. pipe	Waract	9.50
Outfit A, With One Lead Hose and Nozzle.	Fig. 905. 2½-inch Spray Pump with 2½ feet 1-inch iron suction pipe with brass strainer and one lead of 10 feet, ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzle. (Wryneck)					13.00
Outfit AA.	Fig. 905. 3-inch Spray Pump fitted in same manner.					14.00
Outfit B, With Two Leads Hose and Nozzles	Fig. 905. 2½-inch Spray Pump with 2½ feet 1-inch iron suction pipe with brass strainer and two leads of 10 feet each, ½-inch discharge hose, with "Seneca" or (Vermorel) Spray Nozzles. (Wrythen)					16.50
Outfit BB.	Fig. 905. 3-inch Spray Pump fitted in same manner.					17.50

Special Spray Catalogue, "How to Spray, When to Spray, and What Pumps to Use," issued annually, furnished upon application.

Goulds "Standard" Double-Acting Spray Pump

With Brass-Lined Cylinder, Brass-Cased Differential Plunger

Fig. 905½ shows our Double-Acting Spray Pump with base for attaching to either side or top of barrel. This Pump has brass-lined cylinder, brass-cased differential plunger, and is substantially the same as Fig. 905, described on foregoing page, but has an additional air chamber on spout. In spraying old orchards this is a considerable advantage, as the spray can be discharged to topmost branches. Pump has two discharges cut for pipe, but when ordered without hose and nozzles, we plug one opening and fit the other with brass bushing and half coupling for hose. Also supply brass suction strainer. Prices do not include barrel.

Pump regularly fitted with metallic lower valve.

Dash Agitator, Fig. 1079, see outline on preceding page, \$1.25 extra list.

Mechanical Agitator, Fig. 1321, see outline cut, \$1.50 extra list. For Nozzles, Extensions, etc., see pages 255 to 258.

Fig. 905½. Sizes, Prices, Etc.

	No.	Dia. Outer Cylinder	Suction	Double Discharge	Cipher	Brass- Lined
Pump with Strainer and Hose Coupling.	2	2½ in.	1 in. pipe	½ in. hose and ¾ in. pipe	Zuta	\$9.50
	4	3 "	1¼ in. pipe	¾ in. hose and 1 in. pipe	Zymfk	10.50
Outfit A, With One Lead Hose and Nozzle.	Fig. 905½. 2½-inch Spray Pump with 2½ feet 1-inch iron suction pipe with brass strainer and one lead of 10 feet ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzle. (Zutex)					14.00
Outfit AA.	Fig. 905½. 3-inch Spray Pump fitted in same manner. (Zymfls)					15.00
Outfit B, With Two Leads Hose and Nozzles.	Fig. 905½. 2½-inch Spray Pump with 2½ feet 1-inch iron suction pipe with brass strainer and two leads of 10 feet each, ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzles. (Zuto)					17.50
Outfit BB.	Fig. 905½. 3-inch Spray Pump fitted in same manner. (Zymfma)					18.50

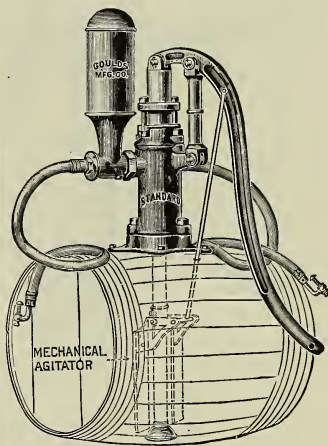


Fig. 905½

Special Spray Catalogue, "How to Spray, When to Spray, and What Pumps to Use," issued annually and furnished upon application.

Goulds "Fruitall" Spray Pump

With Agitator. All Working Parts Brass.

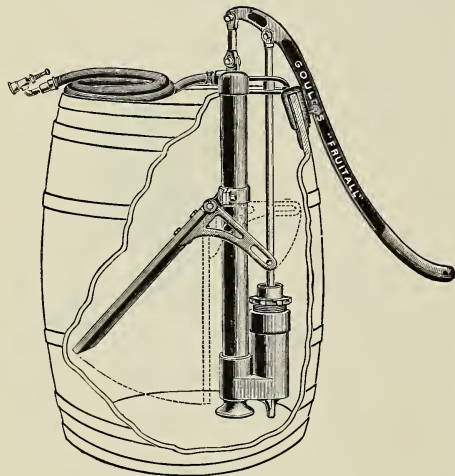


Fig. 1188

Fig. 1188, "Fruitall" Spray Pump, is made on the same general lines as our now famous "Pomona." It is, however, made lighter and of smaller capacity. All working parts, including plunger, gland, valves, valve seats, and strainer, are made of brass. Regularly fitted with double wing paddle agitator, same style as used on "Pomona," and which has proven to be the best type. Pump is held in barrel by anchor at bottom and adjustable clamp at top, fitting over end of stave. Not made for side of barrel. When furnished without agitator, deduct \$0.75 from list. We supply barrel, and mount Pump in the same, for \$1.50 extra net. For Nozzles, Extension, etc., see pages 255 to 258.

Fig. 1188. Sizes, Prices, Etc.

	PLUNGER		Discharge	Cipher	Price
	Dia.	Stroke			
Pump with Agitator and Hose Coupling	2 in.	4 in.	½ in. hose	Wumac	\$10.00
Outfit A, With One Lead of Hose and Nozzle	Fig. 1188. Spray Pump with agitator and one lead to feet. ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzle. (Wumbo)				13.00
Outfit B, With Two Leads of Hose and Nozzles	Fig. 1188. Spray Pump with agitator and two leads to feet each, ½ inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzle. (Wullti)				15.50

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

Goulds "Pomona" Spray Pump

With Agitator. All Working Parts of Bronze

Fig. 1100, "Pomona" Spray Pump, has won for itself an enviable reputation. We unhesitatingly offer it as the best orchard Spray Pump for mounting in barrel. It has great power and capacity. Briefly stated other points of superiority are:

No leather packings, consequently no hardened and useless valves. All working parts bronze, including plunger, gland, valves, valve seats, etc. Plunger is outside packed. Valves are easily accessible. Air chamber is very large and of steel, free from imperfections of cast iron. Lever long and powerful, with adjustable stroke three, four or five inches. The mechanical agitator, as shown in cut, is operated by the stroke of the handle, so whenever any liquid is pumped it is thoroughly agitated. Pump is held securely by small anchor located at the bottom of barrel and by adjustable clamp plate at the top. Our new plate will admit insertion or withdrawal from the barrel without removing agitator.

Pump projects but little above top of barrel, and is not caught by branches.

We furnish Pumps either for end or side of barrel, but always for end unless otherwise ordered. Pump, less agitator, deduct \$1.00 from list. We supply barrel and mount Pump in same for \$1.50 extra net.

For nozzles, extensions, etc., see pages 255 to 258.

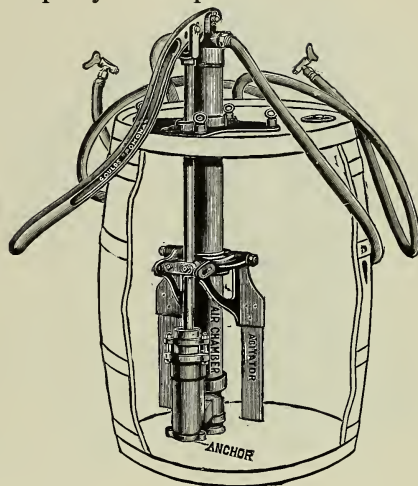


Fig. 1100 (As Mounted on End of Barrel)

Fig. 1100. Sizes, Prices, Etc.

	PLUNGER		Double Discharge	Cipher	Price
	Diameter	Stroke			
Pump with Agitator and Hose Coupling.	2½ in.	Adjustable 3, 4 or 5 in.	½ in. hose and ¾ in. pipe	Wullol	\$15.00
Outfit A, with One Lead Discharge Hose and Nozzle.	Fig. 1100, Spray Pump, with agitator and one lead 10 feet, ½-inch discharge hose with "Seneca" or "Vermorel" Spray Nozzle.			Wullpw	18.00
Outfit B, with Two Leads Discharge Hose and Nozzles.	Fig. 1100, Spray Pump, with agitator and two leads 10 feet each, ½-inch discharge hose, with "Seneca" or "Vermorel" Spray Nozzle.			Wullre	20.50

Special Spray Catalogue "How to Spray, When to Spray, and What Pumps to Use," issued annually and furnished upon application.

Goulds "Savelot" Spray Pump

With Agitator. All Working Parts Brass

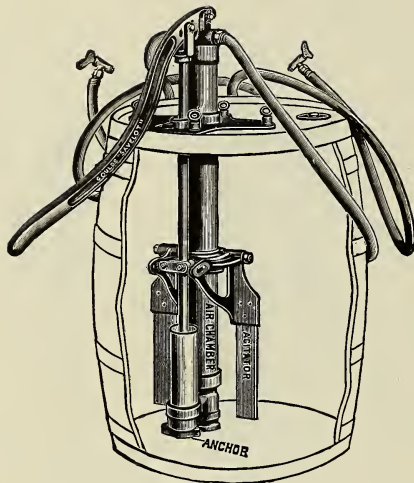


Fig. 1336

Fig. 1336, "Savelot," differs from Fig. 1100, "Pomona," page 249, only in having brass tube cylinder with brass piston, with cupped packings made of special material which is not affected or hardened by the chemicals used in spraying. No leather is used either on piston or valves. Valves are brass on brass seats and are easily accessible. Agitator of most effective type. Powerful lever with adjustable stroke. Pump projects but little above top of barrel, and is not caught by branches. Pumps to order for side of barrel.

Pump, less agitator, deduct \$1.00 from list. We supply barrel and mount pump in same for \$1.50 extra net.

Fig. 1336. Size, Prices, Etc.

	PLUNGER		Double Discharge	Cipher	Price
	Diameter	Stroke			
Pump with Agitator and Hose Coupling.	2½ -in.	Adjustable 3, 4 or 5 in.	½-in. hose	Warreqa	\$13.50
Outfit A, With One Lead Dis- charge Hose and Nozzle	Fig. 1336. With agitator and one lead 10 feet, ½-inch discharge hose, with "Seneca" or "Vermorel" Nozzle.			Warrerl	16.50
Outfit B With Two Leads Dis- charge Hose and Nozzle	Fig. 1336. With agitator and two leads 10 feet each, ½-inch discharge hose, with "Seneca" or "Vermorel" Nozzle.			Warresm	19.00

Goulds "Kerowater" Spray Pump

For Emulsifying and Spraying Oil and Water

(Patented March 7, 1899.)

Fig. 1187, "Kerowater" Spray Pump, is designed for mechanically mixing and spraying kerosene and water or crude petroleum and water. The oil and water are so thoroughly mixed and blended that the discharge from the nozzle is a milk-like emulsion. Either 5, 10, 15, 20, or 25 per cent. oil can be used.

Construction is simple. As shown by engraving, a galvanized iron tank, containing oil, goes inside of a barrel, containing water. Inside of oil tank is a small Pump, and outside of oil tank is another Pump, similar in design, but larger. Both Pumps are operated by one common lever, and while one draws oil from the oil tank, the other draws water from the surrounding barrel. They both discharge at a common point, where the water and oil are blended.

Percentage of oil is varied by changing a pin in the head of lever, which shortens or lengthens the stroke of oil Pump. Pump is a positive measuring device and delivers exact percentages of oil. Outfit is readily removed from barrel. Oil tank and Pump can be removed and the water Pump used for general spraying with Bordeaux Mixture, etc.

Water Pump is similar to Fig. 1188, page 248, and at 75 cents extra list we can supply Agitator, as there shown.

Notice that prices below include the barrel and double brass shut-off.

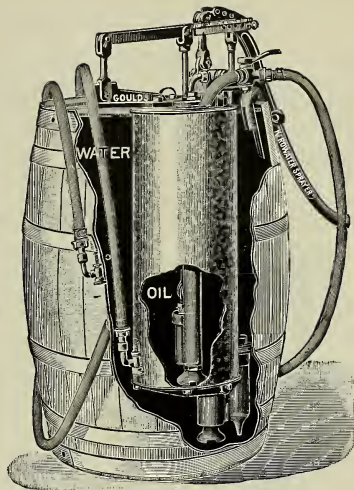


Fig. 1187 "Outfit B"

Fig. 1187. Size, Prices, Etc.

	WATER PLUNGER		Discharge	Cipher	Price
	Diameter	Stroke			
Double Pump Complete Mounted in Barrel and Fitted with Brass Double Shut-off and two Half Hose Couplings. (No Hose or Nozzles)	2 in.	4 in.	½ in. hose	Zymga	\$21.00
Outfit A. With One Lead Hose and Nozzle.	Fig. 1187, "Kerowater," with one lead 10 feet, ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzle. Mounted in barrel and supplied with double shut-off (Fig. 1186) and extra half hose coupling.			Zymhe	23.75
Outfit B. With Two Leads Hose and Nozzles.	Fig. 1187, "Kerowater," with two leads 10 feet each, ½-inch discharge hose with "Seneca" (or Vermorel) Spray Nozzle. Mounted in barrel and supplied with double shut-off (Fig. 1186.)			Zymhat	26.50

Special Spray Catalogue "How to Spray, When to Spray, and What Pumps to Use," issued annually and furnished upon application.

Goulds "Sentinel" Double-Acting Spray Pump

With Removable Brass Cylinder Lining, Brass Valves, Plunger Rod, Etc.

Fig. 963 shows our "Sentinel" Double-Acting Spray Pump, with brass-lined cylinder, brass valves and seats, piston rod, etc., rendering it unaffected by acids, while the extra large air chamber specially adapts it for spraying tall trees. The suction and discharge valves are all grouped in valve chest and are readily accessible by removing air chamber. This Pump supplies the demand for a powerful Spray Pump of sufficient capacity to supply, if necessary, four leads of discharge hose or two leads, each having two, three or four nozzles. In large orchards or groves, such a Pump is a necessity, and our "Sentinel" Pump will be found to answer every requirement. Pump has double suction and discharge openings. When ordered without hose or spray nozzles, we plug one suction and fit the other with brass bushing and half coupling for $1\frac{1}{4}$ -inch hose; also fit two discharges with bushings and half couplings for $\frac{1}{2}$ inch hose. Brass "Y's" or Siamese connections, to give two and four leads of hose, extra, as given on page 257. For agitators, nozzles, extensions and fittings, see pages 255 to 258. Regular air chamber is $5 \times 21\frac{1}{2}$ inches. When so ordered, we supply with 6×30 -inch air chamber, in place of our regular one, at \$2.50 additional list.

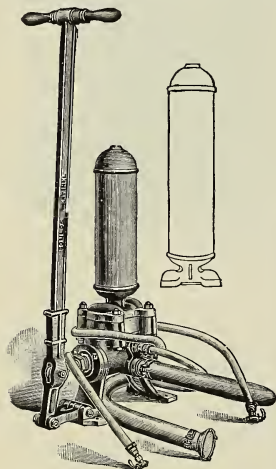


Fig. 963

Fig. 963. Sizes, Prices, Etc.

	Dia. Cyl.	Suction	Double Discharge	Cipher	Price
Pump with Strainer and Hose Couplings.	3 in.	$1\frac{1}{4}$ in. hose	$\frac{1}{2}$ in. hose	Woolen	\$22.50
Outfit A	Fig. 963. "Sentinel" Spray Pump, with 5 feet $1\frac{1}{4}$ -inch rubber suction hose and two leads, 25 feet each, $\frac{1}{2}$ -inch discharge hose with "Seneca (or other) spray nozzles, couplings and hose bands, complete. (Duslap)				36.00
Outfit B	Fig. 963. "Sentinel" Spray Pump, with 5 feet, $1\frac{1}{4}$ -inch rubber suction hose and four leads, 25 feet each, $\frac{1}{2}$ -inch discharge hose with "Seneca" (or other) spray nozzles, couplings and hose bands, complete. (Dunled)				48.00

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

Goulds "Sentinel Jr." Double-Acting Spray Pump

Outside Guided Rod. Removable Brass Cylinder Lining

Goulds "Sentinel Jr." Double-Acting Spray Pump is designed especially for and meets the requirements of the best Orchardists and Orange growers desiring quick work at high pressure. Notwithstanding the large capacity of this Pump one man can operate it constantly against over 100 pounds pressure without undue effort.

Pump is often used with six nozzles on end of one extension pipe. Often used with several leads of hose

Piston is easily and quickly repacked and all valves easily accessible.

Piston-rod, valves, valve seats and cylinder lining are brass.

Piston-rod is outside guided so that it runs perfectly straight.

Pump ordered without hose has one 1-inch Suction and two ½-inch Discharge Brass Hose Couplings, also Brass Strainer. Brass "Ys" for fitting two leads of discharge hose on a side furnished when ordered. Air chamber is 6x30 inches.

Fig. 1316. Sizes, Prices, Etc.

	Diameter Cylinder	Suction	Double Discharge	Cipher	Brass Lined
Pump with Strainer and Hose Couplings.	2½ in.	1 in. hose	½ in. hose	Veipal	\$25.00
Outfit A.	Fig. 1316 with 5 feet 1-inch rubber suction hose and strainer and one 25 foot lead of ½-inch discharge hose with one "Seneca" (or other) Spray Nozzle.				32.75
Outfit B.	Fig. 1316 with 5 feet 1-inch rubber suction hose and strainer and two 25 foot lengths of ½-inch discharge hose each with one "Seneca" (or other) Spray Nozzle.				38.25
Outfit C.	Fig. 1316 with 5 feet 1-inch rubber suction hose and strainer and four 25 foot lengths of ½-inch discharge hose each with one "Seneca" (or other) Spray Nozzle.				50.25

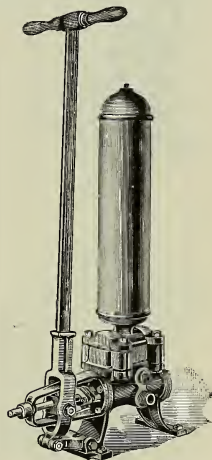


Fig. 1316

Hose can be furnished in any length and any number of leads, Double Nozzles, Extensions, etc.

Goulds "Monarch" Two-Cylinder Spray Pump

Outside Packed. Brass Plungers, Glands, Valves, Etc.

Fig. 1318, "Monarch," has two vertical Brass Plungers operated by a single lever so arranged as to give powerful leverage and heavy pressure. One man can maintain 125 lbs. pressure and pump large quantity of liquid.

Plungers can be re-packed without being removed.

Brass glands and gland followers. Brass valves, valve caps and valve seats easily accessible.

Malleable lever may be operated in a vertical or horizontal position.

Brass "Y," fitting discharge for two leads of hose furnished when ordered.

Fig. 1318. Size, Prices, Etc.



Fig. 1318

	Diameter Cylinders each	Suction	Double Discharge	Cipher	Price
Pump with Strainer and Hose Couplings.	2 in. 2½ "	¾ in. hose 1 "	½ in. hose ½ "	Veerape Velads	\$22.50 29.25
Outfit A.	Fig. 1318. 2 inch, fitted with 5 feet ¾-inch rubber suction hose with strainer and 1 lead ½-inch discharge hose 15 feet long, with one "Seneca" (or other) Spray Nozzle. (Veerag)				29.25
Outfit AA.	Fig. 1318. 2½ inch, fitted up in same manner except has 1-inch suction hose. (Woldgi)				36.50
Outfit B.	Fig. 1318. 2 inch, fitted with 5 feet ¾-inch rubber suction hose with strainer and 2 leads ½-inch discharge hose each 15 feet long, each with 1 "Seneca" (or other) Spray Nozzle. (Veerart)				33.75
Outfit BB	Fig. 1318. 2½-inch, fitted in same manner except has 1-inch suction hose. (Woldhe)				41.00

Discharge hose can be furnished in any length, also Double Nozzles, Extensions, etc.

Goulds Field Crop Sprayer

Used in Connection with any Hand or Power Sprayer

Fig. 1322 consists of two sections of iron pipe, (each having two "Seneca" Nozzles) hinged at one end and fastened to wagon attachment. It will spray four rows, any distance apart up to 44 inches, or cover a space 14½ feet in width. Connection allows Sprayer to be easily raised or lowered; spray to be thrown, forward, backward, up or down. It may be folded to pass anywhere with the wagon. It is the simplest, cheapest and most convenient sprayer of its kind. Parts in outline not included in price.

Fig. 1322. Price, Etc.

Complete as shown in cut with four "Seneca" Nozzles and coupling for connecting to discharge hose of any barrel or power sprayer.....
(Veered) \$10.00

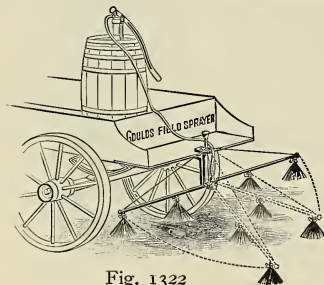


Fig. 1322

Goulds Spray Nozzles

"Vermorel" Spray Nozzles with Degorger

Fig. 55, "Vermorel" Spray Nozzel with Degorger, affords a conical discharge, adapting it for close range spraying of vines, trees, etc. The liquid is forced through an eddy chamber and discharge cap. We construct this Nozzle in two sections, making it possible of being taken apart and cleaned. The one-piece nozzle, when plugged, is worthless. It has a stuffing-box, which prevents leakage. It is readily cleaned in operation by pulling or pressing the Degorger against limb of tree, or pressing with thumb.

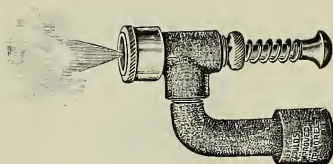


Fig. 55

Fig. 55, cut for 1/4-inch pipe.....	(Zoide)	\$1.00
Fig. 55, including hose connection (Fig. 65 or 67, page 257).....	(Rabijx)	2.25

Two-Discharge "Vermorel" Nozzle, with Degorgers

Fig. 1103, cut for 1/4-inch pipe.....	(Zugdan)	\$2.00
Fig. 1103, including hose connection (Fig. 65 or 67, page 257).....	(Rabiks)	2.25

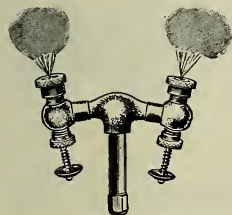


Fig. 1103

Three-Discharge "Vermorel" Nozzle, with Degorgers

Fig. 1104, cut for 1/4-inch pipe.....	(Zugdud)	\$2.75
Fig. 1104, including hose connection (Fig. 65 or 67, page 257).....	(Rabilim)	3.00

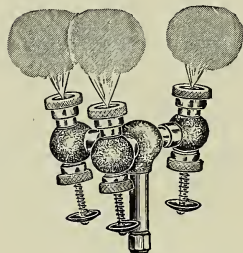


Fig. 1104

Four Discharge "Vermorel" Nozzle

Fig. 1310 consists of four "Vermorel" Spray Nozzles with Degorgers. It affords a conical discharge, adapting it for close range spraying of vines, trees, etc. The liquid is forced through an eddy chamber and discharge cap.

Fig. 1310

Price, cut for 1/4-inch pipe.....	(Zymfwl)	\$3.50
Including hose connection (Fig. 65 or 67, page 257).....	(Zymfroto)	3.75

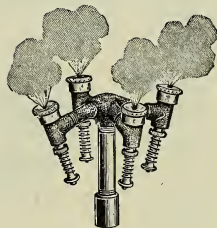


Fig. 1310

Goulds Spray Nozzles

"Seneca" Spray Nozzle

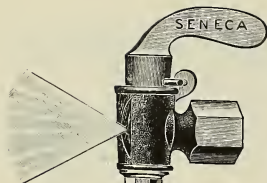


Fig. 81.

Fig. 81, "Seneca" Spray Nozzle, gives a very wide spray, covering a great area. By means of a small adjusting screw the discharge can be nicely graduated, as required, and remains fixed, no matter how often the nozzle may be opened or closed. The nozzle may be cleaned by turning plug across the opening. The discharge is fan shaped. With this class of nozzles, the discharge can be instantly shut off, when not required, thus preventing waste of liquid and loss of labor. Recommended for orchard work.

Fig. 81, cut for ½-inch pipe.....	(Zugbor) \$1.00
Fig. 81, including hose connection (Fig. 65 or 67, page 257).....	(Rabiges) 1.25

"Masson" Spray Nozzle

Fig. 62, "Masson" Spray Nozzle, we offer where extremely fine spray is desired. It may be briefly described as an all-bronze plug cock, constructed to give a fan-shaped discharge at an angle. By simply turning the small "T" handle, the discharge may be graduated from a mist-like spray (consuming only one gallon of liquid in fifteen minutes), to as coarse a spray as may be desired to use. With this class of nozzles, the discharge can be instantly shut off, when not required, thus preventing waste of liquid and loss of labor. It may be cleaned by turning plug across the opening.

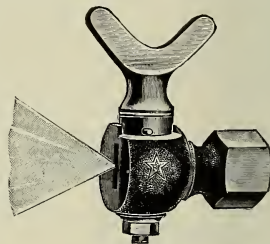


Fig. 62.

Fig. 62, cut for ¼-inch pipe.....	(Zufva) \$1.00
Fig. 62, including hose connection (Fig. 65 or 67, page 257).....	(Rabihe) 1.25

"Calla" Spray Nozzle

Fig. 69, "Calla" Spray Nozzle, can be changed from solid stream to fine or coarse spray by adjustment of slide contained in the cap of nozzle. Unless otherwise ordered, Fig. 69 is arranged for wiring into ½-inch hose. Can be supplied cut for ¼-inch pipe when so ordered.

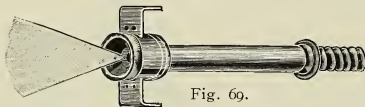


Fig. 69.

Fig. 69½ is the same as as Fig. 69, except that it is cut to fit ½ or ¾-inch male half hose coupling.

Fig. 69.....	(Vigonia) \$0.50
Fig. 69½.....	(Vigonje) .50

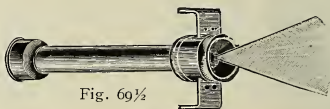


Fig. 69½

"Cyclone" Spray Nozzles

Fig. 51, "Cyclone" Spray Nozzle, gives spray similar in form to that of the "Vermorel." Unlike "Vermorel," the "Cyclone" has no "Degorger." Fig. 52, "Pacific Cyclone," differs from Fig. 51 only in that it has end discharge. Both are cut for ¼-inch pipe; to fit for hose requires either Fig. 65 or Fig. 67 (page 257), which cost extra.

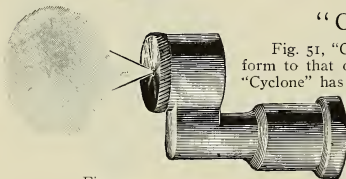


Fig. 52.

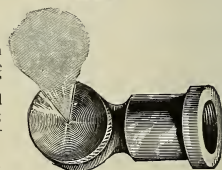


Fig. 51.

Fig. 51, cut for ¼-inch pipe.....	(Zonard) \$0.50
Fig. 52, cut for ¼-inch pipe.....	(Zonate) .50

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

Goulds Spray Pump Fittings



Fig. 65, Coupling, has small end cut $\frac{1}{4}$ -inch pipe thread to fit our spray nozzles, and large end cut to fit $\frac{1}{2}$ or $\frac{3}{4}$ -inch male half-hose coupling.

Fig. 65.....(Zornis) \$0.25

Fig. 65

Fig. 85, Brass Stop Cock, is designed to be used with any of our Spray Pumps, to shut off spray quickly and save loss of liquid. It has shank for attaching $\frac{1}{2}$ -inch discharge hose, and $\frac{1}{4}$ -inch male pipe thread to attach spray nozzle or extension.

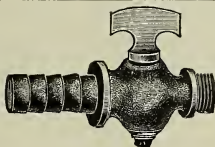


Fig. 85

Fig. 85, as above (Zorned) \$0.65



Fig. 49

Fig. 49, Brass "Y," is cut $\frac{3}{4}$ -inch male pipe thread on inlet (1-inch if so ordered), and $\frac{1}{2}$ or $\frac{3}{4}$ -inch male hose thread on lateral discharges. Fig. 49 $\frac{1}{2}$, Brass "Y," is the same in all respects as Fig. 49, described above, except it has female hose thread on inlet. Lateral discharge same as noted. While it may be employed with any of our Pumps, it is specially designed to be used with Fig. 963, "Sentinel" Spray Pump.

Fig. 49, as above.....(Zonava) \$0.80
Fig. 49 $\frac{1}{2}$, as above.....(Zormad) .80

Fig. 70, Brass Suction Pipe Strainer, is fitted for hose as follows:

Price, $\frac{3}{4}$ in.....(Rabigan) \$0.50
Price, 1 in.....(Zonawl) \$0.50
Price, 1 $\frac{1}{4}$ in.....(Zorlun) \$1.00



Fig. 70

Fig. 1186, Brass "Y" Discharge and Shut-Off, is to be used with any of our larger Spray Pumps, where one or two leads of hose are to be employed. Either or both of the discharges may be opened or closed at will, as shown in the illustration. Butt is threaded to fit pump, lateral discharges threaded to fit $\frac{1}{2}$ -inch or $\frac{3}{4}$ -inch hose coupling.

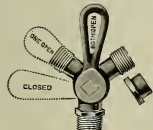


Fig. 1186

Price.....(Zymfyo) \$2.00

Fig. 67, Coupling, has one end cut $\frac{1}{4}$ -inch pipe thread to fit our Spray Nozzles, and other end is turned to wire into $\frac{1}{2}$ -inch hose (or $\frac{3}{8}$ -inch if so ordered).



Fig. 67

Fig. 67.....(Zornod) \$0.25

Fig. 1074, Brass "Y," designed so that two nozzles can be used on one lead of hose, is tapped to fit $\frac{1}{4}$ -inch pipe at butt, which also adapts it to fit our Fig. 65, Coupling, for hose or iron pipe. Any of our various nozzles can be screwed on the branches.



Fig. 1074

Fig. 1074, Brass "Y,".....(Elysign) \$0.50



Fig. 49 $\frac{1}{2}$

Fig. 71, Brass Suction Pipe Strainer, is fitted for wrought iron pipe as follows:

Price, 1 in.....(Zorlyd) \$0.50



Fig. 71

Fig. 1092, Brass Shut-Off Discharge Connection, can be used with any of our Barrel Spray Pumps to control the discharge at the pump. One end is cut to fit the pump, the other threaded for $\frac{1}{2}$ or $\frac{3}{4}$ -inch hose coupling.



Fig. 1092

Price.....(Zymizm) \$1.50

Spray Pump Extensions and Attachments

For Orchard and Garden Use



Fig. 1339

Fig. 1339. Extension consists of 8 feet of $\frac{1}{4}$ inch iron or brass pipe with brass stop cock cut $\frac{1}{4}$ -inch female pipe thread, thus adapting it for attaching to hose by either Fig. 65 or 67 attachment. Other end is cut $\frac{1}{4}$ -inch male pipe thread to fit spray nozzles. Hand shield protects operator from any dripping.

Fig. 1339, iron pipe, complete with cock.....	(Alasko) \$1.25
Fig. 1339, brass pipe complete with cock.....	(Alterantuc) 4.00



Fig. 48

Fig. 48. Bamboo Extension, has 8 feet of iron or brass pipe inside of bamboo, making an easy and pleasant extension to handle. Has stop cock fitted for $\frac{1}{2}$ or $\frac{3}{4}$ -inch hose. Other end cut $\frac{1}{4}$ -inch pipe thread to fit our spray nozzles.

Fig. 48, complete as above, with iron pipe inside.....	(Zonals) \$3.00
Fig. 48, complete as above, with brass pipe inside.....	(Zirdic) 6.00

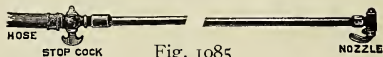


Fig. 1085

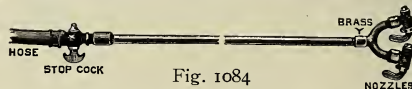


Fig. 1084

Fig. 1085 is Fig. 1109, Extension Pipe, described above, with Fig. 81, "Seneca" Nozzle.

Fig. 1084 is Fig. 1109, Extension Pipe, described above, with Brass, "Y" and two Fig. 81, "Seneca" Nozzles.

Fig. 1085, complete with iron extension pipe,	(Zuin) \$2.50
Fig. 1085, complete with brass extension pipe,	(Zujk) 5.00

Fig. 1084, complete with iron extension pipe	(Zukc) \$4.00
Fig. 1084, complete with brass extension pipe	(Zukug) 6.50

Goulds Garden or Fire Engine

Fig. 304 represents our Garden Engine, with either wood or iron handles, as ordered. The Pump is placed inside of box, of dimensions suitably large to hold about a barrel of water, and, being on wheels, is easily moved to any place where it is desirable to use it. Pump has brass-cased rod, revolving bearer top and extra long handle, which gives a powerful leverage.

Below we give prices on this Engine, complete as per cut, with three feet of one-inch discharge hose and a discharge pipe.

Pump can also be arranged to take suction either from the tank or through suction hose, which can be attached at side of tank. When suction hose is attached, the cap, removed from outer suction opening, is placed over the suction opening inside the tank. When Pump is fitted in this manner, add \$3.00 to list price.

We can also line box with sheet lead, at extra net charge of \$5.00, or with galvanized iron at an extra net charge of \$3.00, rendering it unaffected by swelling or shrinking of the wood.

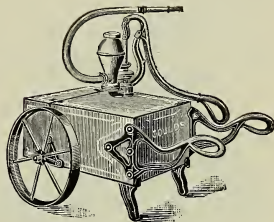


Fig. 304

Fig. 304. Size, Prices, Etc.

	Diameter Pump Cylinder	Stroke	Capacity per Stroke	Suction	Discharge	Cipher	Price
With iron handles.	3 in.	6 in.	.18 gal.	1½ in.	1 in. hose	Driven	\$26.00
With wood handles	3 "	6 "	.18 "	1½ "	1 "	Drolley	25.00

Goulds "Baltic" Hand Fire Engine

With Heavy Galvanized-Iron Tank and Malleable-Iron Lever

Fig. 1171 shows our "Baltic" Hand Fire Engine equipped ready for use. It is a powerful fire extinguisher, capable of throwing a stream sixty feet horizontally. It has large Air Chamber, Brass Valves and Valve seats. Polished brass cylinder and top. Tank will hold about 42 gallons. It is very easy in action. We supply with six feet of discharge hose and brass hose pipe. Extra lengths of hose and hose couplings furnished as ordered at additional cost.

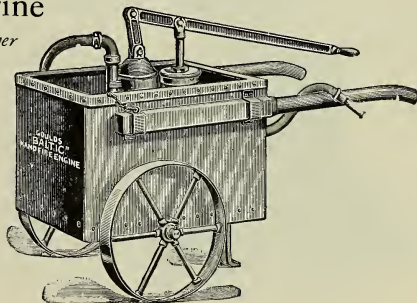


Fig. 1171

Fig. 1171. Size, Price, Etc.

Diameter Cylinder	Stroke	Capacity per Minute	Discharge	Approx. Weight	Cipher	Brass Cylinder
3½ in.	8 in.	14 gals.	1 in. hose	185 lbs.	Steak	\$50.00

Goulds Double-Acting Garden or Fire Engine

Brass-Lined Cylinder, Mounted on Wrought-Iron Barrow

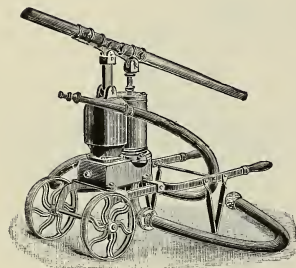


Fig. 630

Fig. 630 shows a portable Double-Acting Lift and Force Pump. The cylinder is iron, brass-lined. Four to six men can operate the Engine at one time. It will throw a fine stream through a half-inch nozzle from 80 to 100 feet.

One bolt and nut holds in place a door at either end of base, which can be opened to get at the rubber ball valves.

Below we give price of Engine complete as per cut, with 6 feet 2-inch spiral suction hose and 12 feet 1½-inch discharge hose, brass hose pipe and spreader, hose couplings, suction basket, etc.

Longer lengths of hose can be furnished, if desired, at extra price. See pages 277 to 279 for lists of Hose, Couplings, etc.

Fig. 630. Size, Price, Etc.

Diameter Cylinder	Stroke	Capacity per Revolution	Suction	Discharge	Cipher	Brass-Lined with Hose, Etc., as Above
5 in.	8 in.	1.36 gals.	2 in. hose	1½ in. hose	Racer	\$62.00

Goulds Double-Acting Garden or Fire Engine

Brass-Lined Cylinder and Wrought-Iron Extension Levers

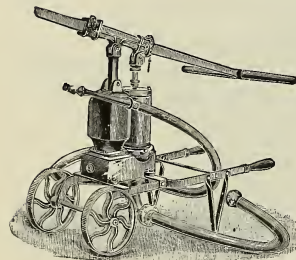


Fig. 653

This is the same Engine as described above, except that this is provided with wrought-iron, adjustable arms with wood brakes, on which six to eight men can work, and is consequently capable of performing greater service. Below we give price of Engine complete as per cut, with 6 feet 2-inch spiral suction hose and 12 feet 1½-inch discharge hose, brass hose pipe and spreader, hose couplings, suction basket, etc.

Longer lengths of hose can be furnished, if desired, at extra price. See pages 277 to 279 for lists of Hose, Couplings, etc.

Fig. 653. Size, Price, Etc.

Diameter Cylinder	Stroke	Capacity per Revolution	Suction	Discharge	Cipher	Brass-Lined with Hose, Etc., as Above
5 in.	8 in.	1.36 gals.	2 in. hose	1½ in. hose	Ravelus	\$64.00

Goulds Double-Acting Garden or Fire Engine

With Wrought-Iron Barrow and Reel for Hose

Fig. 1008½ represents our Double-Acting Garden or Fire Engine, on wrought-iron barrow, with wheels and hose reel. It has brass-lined cylinder and rubber ball valves. Four to six men can operate the Engine to good effect. Hose reel will carry 50 to 75 feet of 1½-inch three-ply rubber hose. We list Engine complete, as per cut, with 6 feet 2-inch spiral suction hose, and 12 feet 1½-inch discharge hose; brass hose pipe, sprinkler, hose coupling and suction basket. Larger lengths of hose can be furnished, if desired, at extra price. See pages 277 to 279 for hose, couplings, etc.

Fig. 1008½. Size, Price, Etc.

Diameter Cylinder	Stroke	Capacity per Revolution	Suction	Discharge	Cipher	Brass Lined, with Hose, Etc. as Above
5 in.	8 in.	1.36 gals.	2 in. hose	1½ in. hose	Baldrick	\$75.00

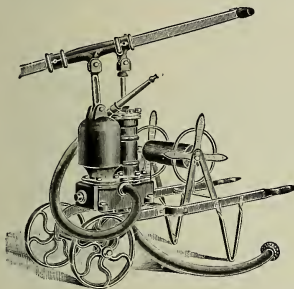


Fig. 1008½

Goulds Union Hand Fire Engine

Fig. 766 represents our Fig. 284, Two-Cylinder Force Pump, mounted upon substantial truck. The tank is made of the best galvanized wrought-iron and sits on a very heavy and strongly bolted wood frame. It can be operated by from two to six men, and will draw from the tank or through suction hose from any other supply. When suction hose is attached, the cap, removed from suction opening outside of the tank, is placed over suction opening inside the tank. The knees are so constructed that they will fold up while being moved, and when in place hold the Engine firmly on the ground when in operation. Below we give price on Engine complete. No suction or discharge hose is included in these prices, but we can furnish same at lowest market rates.

Fig. 766. Size, Price, Etc.

Dia. Cyl.	Stroke	Capacity per Rev.	Suction	Discharge	BRASS-LINED CYLINDER		BRASS CYLINDER	
					Cipher	Price	Cipher	Price
4 in.	6 in.	.65 gal.	2½ in. hose	1½ in. hose	Vixane	\$110.00	Vixind	\$125.00

See pages 277 to 279 for lists of Hose, Couplings, Discharge Pipes, Strainers, etc.

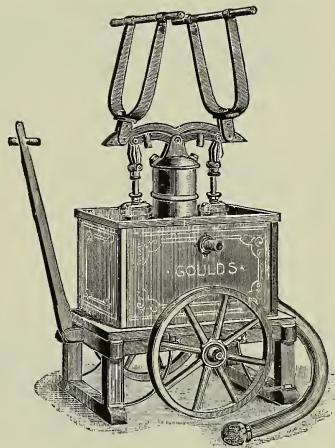


Fig. 766

Goulds "Challenge" Double-Acting Force Pumps

On Platform with Wheels

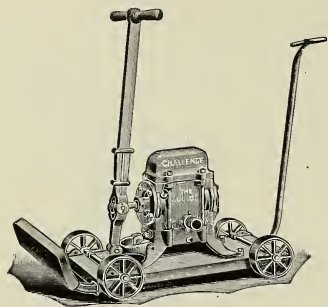


Fig. 774

Fig. 774 represents "Challenge" Double-Acting Force Pump, mounted on platform with wheels for portable use.

On all "Challenge" Pumps piston rods are brass-cased, valves and valve seats of brass, cylinders either brass-lined or brass, therefore working parts are non-corrosive.

The platform brake answers a two-fold purpose, being large enough to admit of the operator standing upon it while working the Pump, and at the same time holding it firm and steady.

Suction and discharge fitted for hose, unless otherwise ordered.

Fig. 770 represents our "Challenge" Double-Acting Force Pump, described above, in a larger form, and arranged with double levers. This Pump has only one stuffing box, so that it is less liable to leak than with two, and in case of such an accident one set of valves would be in readiness at all events, and thus arranged can be operated, too, with much less friction and labor. For use on ship wharves, about factories, mills, mines, these Pumps are almost invaluable.

Suction and discharge fitted for hose, unless otherwise ordered.

Fig. 774. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Suction	Discharge	BRASS-LINED		BRASS	
					Cipher	Price	Cipher	Price
2	2½ in.	4½ in.	1½ in. hose	1 in. hose	Vitrify	\$40.00	Vocalmo	\$87.50
4	3 "	4½ "	1½ "	1½ "	Vitriol	42.50	Vocalny	90.00
8	4 "	4½ "	1½ "	1½ "	Vituline	45.00	Vocams	105.00

Fig. 770. Sizes, Prices, Etc.

No.	Dia. Cyl.	Stroke	Suction	Discharge	BRASS-LINED		BRASS	
					Cipher	Price	Cipher	Price
12	5 in.	5 in.	2 in. hose	1½ in. hose	Vocaor	\$70.00	Vocative	\$180.00
16	6 "	5 "	2½ "	2 "	Vocumy	80.00	Vocule	220.00

For Spring Piston (Brass) add to list No. 12, \$6.00 ; No. 16, \$8.00.

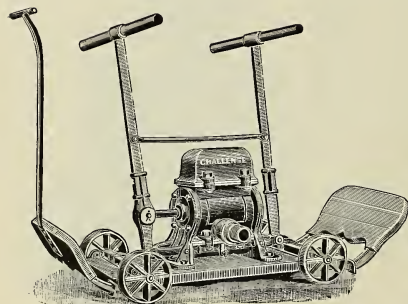


Fig. 770

Goulds Two-Cylinder Force Pump

With Folding Brakes, on Platform with Wheels

Fig. 285 represents our portable Two-Cylinder Force Pump, aranged with folding brakes large enough to admit of six men working upon them. It is a very powerful Pump, and, in case of fire, will be found invaluable.

Pump is made with brass-cased piston rods, valves and stuffing boxes.

The valve at the bottom of the Cylinder is double and improved in its construction, and can be readily tripped or opened by pressing down the lever until it strikes the top of the air chamber.

The Pump is simple in its construction, not liable to get out of order, and by the directness of its action and consequent freedom from friction is a most efficient and powerful Pump.

We make them with Iron Cylinders or with Brass Cylinders, with all the working portions of the Pump of the same material.

For Hose, Hose Couplings, Nozzles, etc., see pages 277 to 279.

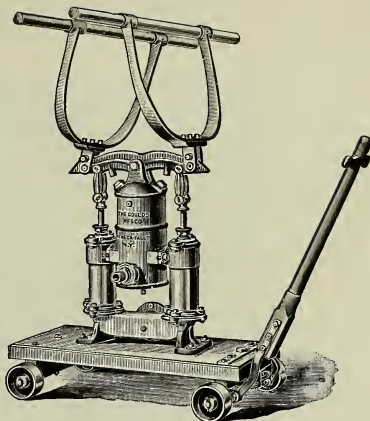


Fig. 285

Fig. 285. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Rev.	Suction	Discharge	IRON CYLINDERS		BRASS-LINED CYLS.		BRASS CYLINDERS	
						Cipher	Price	Cipher	Price	Cipher	Price
2	2½ in.	6 in.	.26 gal.	2 in. hose	1¼ in. hose	Defy	\$68.00	Raptwot	\$75.00	Delaine	\$88.00
4	3 "	6 "	.37 "	2 "	1¼ "	Visipl	70.00	Rapwua	77.00	Visit	90.00
6	3½ "	6 "	.50 "	2½ "	1½ "	Deify	77.00	Rapwyl	87.00	Delf	100.00
8	4 "	6 "	.65 "	2½ "	1½ "	Deign	85.00	Rapxon	95.00	Dell	115.00
10	4½ "	6 "	.83 "	3 "	2 "	Deist	95.00	Rapxul	110.00	Delve	130.00
12	5 "	8 "	1.36 "	4 "	3 "	Daygo	105.00	Rawaya	120.00	Daygul	145.00
16	6 "	8 "	1.96 "	4 "	3 "	Deity	135.00	Raweb	155.00	Demi	185.00

Goulds Swan-Neck Village Fire Engine

Brass Cylinders and Folding Levers

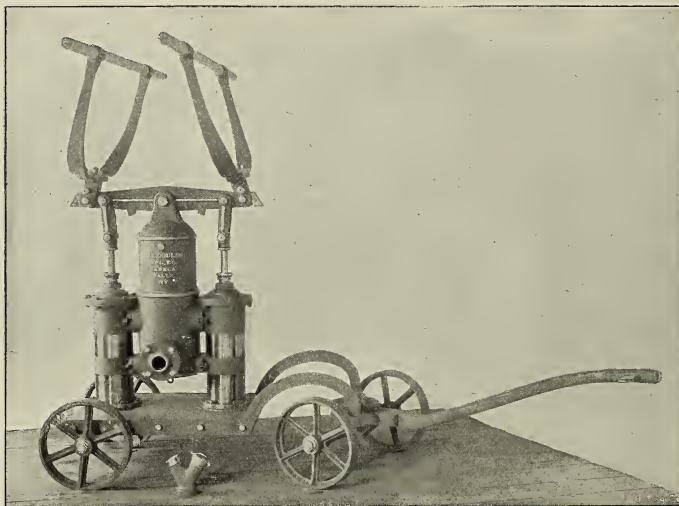


Fig. 1182 is one of our Swan-Neck Portable Fire Engines, arranged to be drawn by hand. It can be turned in its own length. Everything about the Engine is complete and first-class. The Double Brass Cylinder Force Pump used is very powerful. Should any change in the levers or truck be desired to suit any particular locality, we shall always be glad to arrange them to suit the wishes of our correspondents, at lowest possible cost. We build in two sizes. Price does not include hose or fittings. See pages 277 to 279 for these.

Brass "Siamese" double-hose connection, fitting discharge for two leads of hose, furnished when ordered, at \$5.50 extra list.

Fig. 1182. Sizes, Prices, Etc.

No.	Diameter Cylinder	Stroke	Capacity per Minute	Suction	Discharge	Cipber	Brass Cylinders
10	4½ in.	6 in.	34 gals.	2½ in.	1½ in.	Sulky	\$170.00
16	6 "	8 "	78 "	3 "	2 "	Sun	225.00

Goulds Swan-Neck Village Fire Engine

With Gun-Metal Cylinders

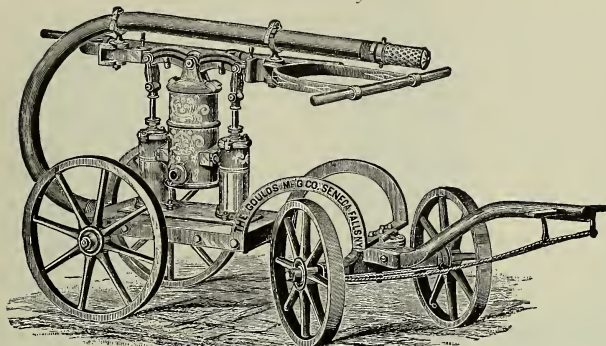


Fig. 465. Size $4\frac{1}{2}$ " x 6"

Fig. 465 represents our Swan-Neck Village Fire Engine with two gun-metal cylinders and arranged to be drawn by hand. This Engine is self-contained, and the swan neck allows it to be turned in its own length. The Pump is securely fastened to an iron bed-plate, doing away with the expense of a reservoir or box. Engine has strong wooden wheels with wrought-iron tires, hard-wood pole, fifth wheel, etc.

Pump has brakes or levers, which are reversible and folding. The valves are of an approved pattern, and everything is as complete as first-class workmanship and the best materials can make it.

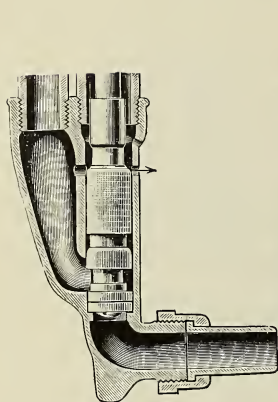
From six to eight men can work on the brakes and with this force an effective fire stream can be thrown from 100 to 125 feet horizontally, or 60 to 90 feet vertically.

Fig. 465. Sizes, Prices, Etc.

No.	Diameter Cylinders	Stroke	Capacity per Revolution	Suction	Discharge	GUN-METAL CYLINDERS	
						Cipher	Price
10	$4\frac{1}{2}$ in.	6 in.	.83 gal.	$2\frac{1}{2}$ in. hose	$1\frac{1}{2}$ in. hose	Glassell	\$200.00
16	6 "	8 "	1.96 "	3 "	2 "	Gleam	280.00

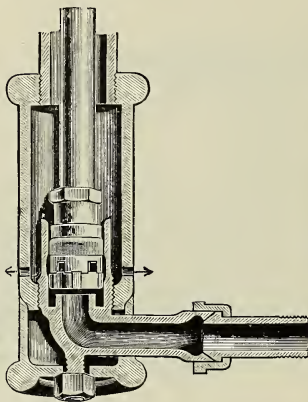
Prices do not include any hose. For list of Hose, Couplings, etc., see pages 277 to 279. Any length of drag rope can be furnished at extra price.

Goulds Hydrant Valve Construction



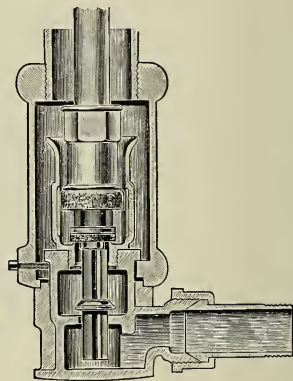
Sectional View of "Crescent" Valve

See Figs. 860, 861, 811, 812, 1040, 813, 1240.



Sectional View of "Star" Valve

See Figs. 646 and 647



Sectional View of "Sun" and "No-Shock" Valve

See Figs. 1174, 1175 and 1116.

All our Hydrants and Street Washers are made with two pipes—wet and dry. All are anti-freezing, and all are tested under pressure. "Crescent" Hydrants and Street Washers have "wet" and "dry" pipes side by side. "Wet" pipe conveys water to spout, while "dry" pipe simply contains the rod which operates plunger.

The illustration is so plain and construction so simple as to hardly need explanation. The rod in this hydrant is actuated by brass screw and handle above and raising plunger the smallest fraction of an inch closes waste before any water can enter discharge pipe. With the valve open, we have a full and unobstructed flow of water through Hydrant, which can well be compared to a straight-way valve or round-way cock. Closing the valve empties all water from wet pipe through drip-hole. Plunger and valve case and couplings are Brass.

To repair "Crescent" Hydrant or Washer, remove top cap or plate and withdraw plunger valve.

"Star" Hydrants and Street Washers have an outer or "dry pipe," inside of which is the "wet pipe," through which water passes to spout, which is screwed into elbow at its top and moves with it. Plunger is attached to lower end of "wet pipe." When wheel handle at top is turned, "wet pipe" is raised, lifting plunger from seat, instantly closing drip-hole and allowing water an unobstructed passage through inner pipe and spout. Plunger can be withdrawn without taking up Hydrant. Valve case and plunger are Brass.

"Sun" and "No-Shock" Hydrants are in valve construction and arrangement of "wet" and "dry" pipes similar to the "Star," with the addition of stop valve, which automatically shuts off the water if plunger is withdrawn for repacking.

Goulds "Star" Hydrant and Street Washer

With Compression Valves and Movable Waterways



Fig. 646
¾ and 1"

These goods have been on the market now for several years, and are so familiar to those who have used them, that any description of their superior merits is unnecessary. There is not much opportunity to display constructive taste in a Street Washer, but it is universally conceded that our Hydrant is handsome in design and finish, and is quite an addition to the appearance of a yard or lawn. We have allowed no opportunity to pass to improve both our Hydrants and Washers; and while in general the principle of their mechanism is unchanged, many minor changes and improvements have been made. Sectional view, page 266, shows valve construction and arrangement of wet and dry pipes.

They are perfectly anti-freezing. They are almost instantly opened or closed by means of the double-threaded brass screw, actuating the valve below. They can be repaired from the top without digging up.

They have a brass swivel or coupling nut (not an iron one), and the brass tube for service pipe connection is ground to a joint with the valve case elbow. They readily sell for more money than any other, because no other bears any comparison with them. It would always be well to have a short piece of lead pipe between the coupling and service pipe, as its flexibility will prevent a fracture of the pipe when the frost heaves the ground, and in clay soil to make some provision for drainage of waste water, if it be nothing more than a small body of gravel or sand between the bottom attachment and clay. We measure from ground line to centre of service pipe inlet. Every Hydrant and Washer is thoroughly tested before leaving our factory.

Our ¾-inch "Star" Hydrants and Washers have inlet fitted for both iron and lead pipe—¾-inch. Spout fitted for ¾-inch hose coupling. Our 1-inch hydrant and washers have 1-inch inlet and outlet. An iron *turnkey* goes with each street washer. Extra keys, 20 cents.



Fig. 647
¾ and 1"

Fig. 646 and 647. Sizes, Prices, Etc.

Length to set in the Ground	FIG. 646. ¾-IN.		FIG. 647. ¾-IN.		FIG. 646. 1-IN.		FIG. 647. 1-IN.	
	Inlet Fitted for ¾-in. Iron and Lead Pipe. Spout for ¾-in. Hose		Inlet Fitted for ¾-in. Iron and Lead Pipe. Spout for ¾-in. Hose		Inlet Fitted for 1-in. Iron and Lead Pipe Spout for 1-in. Hose		Inlet Fitted for 1-Inch Iron and Lead Pipe Spout for 1-Inch Hose	
	Cipher	Price	Cipher	Price	Cipher	Price	Cipher	Price
18 in.	Veneild	\$9.00	Vengerl	\$7.50	Ventana	\$11.50	Veracit	\$9.00
24 "	Venejan	9.00	Venial	7.50	Venter	11.50	Veranda	9.00
30 "	Venecom	10.00	Venison	8.50	Ventilat	12.50	Verb	10.00
36 "	Venene	10.00	Venoma	8.50	Ventiles	12.50	Verbal	10.00
42 "	Venerat	11.00	Venous	9.50	Venture	13.50	Verbami	11.00
48 "	Venerel	11.00	Ventabc	9.50	Venue	13.50	Verbatu	11.00
54 "	Veney	12.00	Ventage	10.50	Venulos	14.50	Verbiag	12.00
60 "	Venge	12.00	Ventail	10.50	Venus	14.50	Verbose	12.00
72 "	Vocal	13.00	Vocaljx	11.50	Vocalic	15.50	Vocalks	13.00

“Crescent” Hydrants and Street Washers

With Straight-Way Valve

The cuts show our new “Crescent” Hydrants and Street Washers with all necessary parts brass, and two pipes—one dry, through which the valve can be withdrawn for repacking, the other forming a passage for the water to the spout.

They are perfectly anti-freezing. The valve closes against the pressure; the waste is ample and reliable, and no water whatever can enter the dry pipe.

In both Hydrant and Street Washer a solid brass screw at the top actuates the plunger valve below. For details of valve construction see sectional view on page 266.

Fig. 860, Hydrant, has stock made in two halves bolted together. Inlet has thread for $\frac{3}{4}$ -inch iron pipe and soldering tube for lead pipe. Spout is provided with brass bushing, cut to receive $\frac{3}{4}$ -inch hose coupling.

Fig. 861, Street Washer, has same valves, pipes, etc., as are used with Hydrant. Inlet has thread for $\frac{3}{4}$ -inch iron pipe and soldering tube for lead pipe. Discharge fitted to receive $\frac{3}{4}$ -inch half hose coupling. Key is furnished with each Street Washer.

Figs. 811 and 812, Hydrant and Washer, are similar in design and construction to Figs. 860 and 861, just described, but carrying larger connecting pipes, heavier valve cases and valves, stocks or sides, and are regularly fitted with bottom inlet for 1-inch iron pipe.

Sizes, Prices, Etc.



Fig. 860,
 $\frac{3}{4}$ "



Fig. 861,
 $\frac{3}{4}$ "

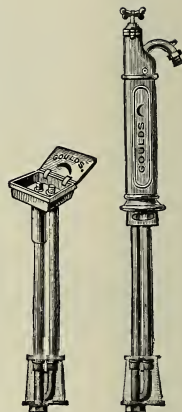


Fig. 812, Fig. 811,
1" 1"

Length to Set in Ground	Fig. 860. $\frac{3}{4}$ -in.		Fig. 861. $\frac{3}{4}$ -in.		Fig. 811. 1-in.		Fig. 812. 1-in.	
	Inlet Fitted for $\frac{3}{4}$ -in. Iron and Lead Pipe.		Inlet Fitted for $\frac{3}{4}$ -in. Iron and Lead Pipe. Discharge Fitted for $\frac{3}{4}$ -in. Hose		Inlet Fitted for 1-in. Iron Pipe. Spout Fitted for 1-in. Hose		Inlet Fitted for 1-in. Iron Pipe. Discharge Fitted for 1-in. Hose	
	Cipher	Price	Cipher	Price	Cipher	Price	Cipher	Price
18 in.	Wagein	\$9.80	Wailme	\$6.60	Wagtail	\$11.65	Waitin	\$7.70
24 "	Wagels	10.10	Waine	6.85	Wahaby	11.95	Waitres	8.00
30 "	Clonged	10.35	Coldiv	7.10	Craftier	12.25	Curbed	8.30
36 "	Wagerd	10.60	Wainag	7.35	Waifer	12.55	Waiv	8.60
42 "	Clubbing	10.80	Colder	7.55	Crustic	12.85	Curiosity	8.90
48 "	Wagest	11.00	Wairn	7.75	Waift	13.15	Waived	9.20
54 "	Wagging	11.25	Craft	8.00	Crustier	13.45	Waiving	9.50
60 "	Waggis	11.50	Waist	8.25	Wailed	13.75	Waivjs	9.80
72 "	Waggie	12.10	Waister	8.85	Waifla	14.35	Wakeb	10.40

Extra Street Washer Keys, \$0.20.

Goulds Crescent Hydrants and Street Washers

With Straight-Way Valve

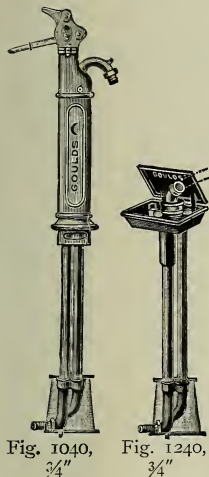


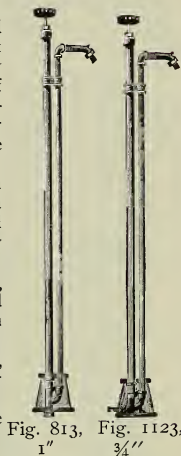
Fig. 1040 represents our "Crescent" Hydrant, arranged with lever instead of screw handle. In all other respects it is the same as Fig. 860, shown on page 268, being perfectly anti-freezing. The flanged top permits the withdrawal of plunger through dry pipe whenever it needs repacking. Inlet has thread for $\frac{3}{4}$ -inch iron pipe and soldering tube for lead pipe. Spout has brass bushing to receive $\frac{3}{4}$ -inch hose coupling.

Fig. 1240, Street Washer, is our Fig. 861, described on previous page, with the addition of a swivel coupling, which will permit hose to be moved in any position and avoids all possibility of kinking, which is the cause of leaks. Key goes with each Street Washer. Extra keys 20c.

Fig. 813, Hydrant, is the same as Fig. 811, page 268, stripped of stock or sides, making it somewhat lighter and cheaper. Inlet is fitted for 1-inch iron pipe. Spout 1-inch hose.

Fig. 1123, Hydrant, is the same as Fig. 860, page 268, stripped of stock or sides. Inlet is fitted for $\frac{3}{4}$ -inch iron or lead pipe. Spout for $\frac{3}{4}$ -inch hose.

Sectional view of valve, used in above, is shown on page 266.



Sizes, Prices, Etc.

Length to Set in Ground	Length Over All of Hydrants (Figs. 1040, 813 and 1123)	FIG. 1040, $\frac{3}{4}$ -INCH		FIG. 813, 1-INCH		FIG. 1123, $\frac{3}{4}$ -INCH		FIG. 1240, $\frac{3}{4}$ -INCH	
		Inlet Fitted for $\frac{3}{4}$ Inch Iron and Lead Pipe Spout Fitted for $\frac{3}{4}$ -Inch Hose		Inlet Fitted 1-Inch Iron Pipe Spout Fitted 1-Inch Hose		Inlet Fitted for $\frac{3}{4}$ -Inch Iron and Lead Pipe Spout Fitted for $\frac{3}{4}$ -Inch Hose		Inlet Fitted $\frac{3}{4}$ -Inch Iron and Lead Pipe Discharge Fitted for $\frac{3}{4}$ -Inch Hose	
		Cipher	Price	Cipher	Price	Cipher	Price	Cipher	Price
18 in.	42 in.	Drebeha	\$10.75	Curiole	\$8.65	Loines	\$7.65	Pokjob	\$7.85
24 "	48 "	Drebeij	11.10	Curru	8.95	Loinfu	7.95	Pokjul	8.10
30 "	54 "	Drebeju	11.40	Curveted	9.25	Loingx	8.25	Pollsac	8.35
36 "	60 "	Drebfal	11.65	Dagger	9.55	Loipa	8.55	Poliset	8.60
42 "	66 "	Drebefed	11.85	Damocles	9.85	Loipate	8.85	Polma	8.80
48 "	72 "	Drebfig	12.10	Danced	10.15	Loipid	9.15	Polmebo	9.00
54 "	78 "	Drebfos	12.35	Dashing	10.45	Loipow	9.45	Polmeck	9.25
60 "	84 "	Drebhub	12.65	Daystar	10.75	Loipum	9.75	Polmedu	9.50
72 "	96 "	Drebgoo	13.30	Decayed	11.35	Lumpis	10.35	Polmefo	10.10

"Sun" and "No Shock" Hydrants and Washer

With Wrought Stock and Adjustable Base

Fig. 1174, "Sun" Hydrant, possesses, we believe, all the best features contributing to a reliable anti-freezing two-pipe hydrant. It is also of handsome appearance. The stock and outer casing is formed of large wrought pipe, inside of which is the smaller or "wet pipe," conveying the water to spout. Base is adjustable. Plunger is actuated by wheel handle and brass screw. Plunger can be withdrawn *through the hydrant and automatic stop valve prevents water flowing when plunger is withdrawn*. Sectional view of plunger, valve and waterways is shown on page 266.

Fig. 1175, "Sun" Street Washer, has same arrangements of pipes and valves, including the very desirable *automatic stop valve*. Box and cover are malleable. Key goes with each Street Washer. Extra keys, 20 cents list.

Fig. 1116, "No Shock" Self-Closing Hydrant, is in all respects identical with Fig. 1174, except that strong brass spring in the top of hydrant seats the plunger (*against the pressure*), unless it is held open by the lever or latch. Individuals and water companies appreciate the self-closing feature as waste of water is prevented.

See sectional view page 266.

Hydrants and Street Washer, described above, have inlet supplied with brass swivel nut and brass tube cut to receive $\frac{3}{4}$ -inch iron pipe coupling and also suitable for wiping into lead pipe. The use of a short piece of lead pipe gives flexibility when frost heaves.

Spout or discharge is fitted for $\frac{3}{4}$ -inch hose coupling.



Fig. 1174, $\frac{3}{4}$ "



Fig. 1116, $\frac{3}{4}$ "

Figs. 1174, 1175 and 1116. Sizes, Prices, Etc.

Length to set in Ground		Fig. 1174, $\frac{3}{4}$ -in. Hydrant		Fig. 1175, $\frac{3}{4}$ -in. Washer		Fig. 1116, $\frac{3}{4}$ -in. Hydrant	
		Inlet Fitted for $\frac{3}{4}$ -in. Iron and Lead Pipe		Inlet Fitted for $\frac{3}{4}$ -in. Iron and Lead Pipe		Inlet Fitted for $\frac{3}{4}$ -in. Iron and Lead Pipe	
		Spout Fitted $\frac{3}{4}$ -in. Hose		Discharge Fitted $\frac{3}{4}$ -in. Hose		Spout Fitted $\frac{3}{4}$ -in. Hose	
	Length Over All of Hydrants	Cipher	Price	Cipher	Price	Cipher	Price
18 in.	45 in.	Rudfeck	\$9.00	Rudfofs	\$7.50	Panijx	\$9.00
24 "	50 "	Rudfint	9.00	Rudgab	7.50	Fustal	9.00
30 "	57 "	Rudfsl	10.00	Rudgeda	8.50	Fustis	10.00
36 "	63 "	Rudfits	10.00	Rudgeck	8.50	Fustite	10.00
42 "	69 "	Panigsi	11.00	Panihy	9.50	Fustiud	11.00
48 "	75 "	Rudfobs	11.00	Rudgeds	9.50	Fustiva	11.00
60 "	87 "	Rudfoda	12.00	Rudequt	10.50	Fustjic	12.00
72 "	99 "	Rudfoes	13.00	Rudfaa	11.50	Fustjoe	13.00

Goulds "Star" Wall Hydrant and Washer

Fig. 1156, Wall Hydrant and Washer, has solid brass compression valve, actuated by a double-threaded brass screw. Hydrant is operated from outside of building, but shuts off inside of building and out of reach of frost. The connection inside is effected by means of a brass swivel or coupling nut and elbow fitted for $\frac{3}{4}$ -inch lead or iron pipe. The hub on the outside is cut for $\frac{3}{4}$ -inch hose; can be cut for 1-inch, if so ordered. We furnish a key with each hydrant.

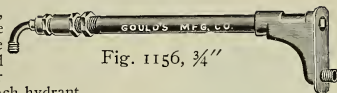
Fig. 1156, $\frac{3}{4}$ "

Fig. 1156. Sizes, Prices, Etc.

Inlet for Iron or Lead Pipe	Outlet For Hose	Length	For Walls	Cipher	Price
$\frac{3}{4}$ in.	$\frac{3}{4}$ in.	12 in.	9 in.	Tanto	\$4.25
$\frac{3}{4}$ "	$\frac{3}{4}$ "	16 "	13 "	Tantub	4.50
$\frac{3}{4}$ "	$\frac{3}{4}$ "	21 "	18 "	Tantva	4.75
$\frac{3}{4}$ "	$\frac{3}{4}$ "	27 "	24 "	Tantwy	5.00

Extra keys, each, 20 cents.



Fig. 1159



Fig. 827

Adjustable Service or Curb Boxes

Fig. 1159 is variously known as "Curb-Box," "Service-Box" and "Stop-Cock Box." The last name describes its use, which is to open and close Stop-Cocks in service pipes—both water and gas. Bottom part is cast-iron, shaped to fit over Stop-Cock. Through this extends a 1-inch wrought pipe, which can be raised or lowered to adjust the top cap to the level of the ground. This upper section is held adjusted by small spring. To admit key, top cap is removed. This is easily done by applying the spanner on the end of our key (as shown in cut). Threads in cap are cut in brass bushing; therefore cap cannot rust fast. Key fits over forked rod which is inside of box, and, turning the rod, opens and closes Stop-Cock. Forked rod is included with every box at prices below. Keys are only furnished when ordered, and then at 50 cents extra list. Fig. 1184 is the same as Fig. 1159, described above, except that a counter-sunk brass plug is inserted in top cap. To admit key, this plug can be removed instead of cap. Prices below include forked rod. Keys only furnished when ordered, and then at 50 cents list.

Figs. 1159 and 1184. Sizes, Prices, Etc.

No.	Extension	Top Section	FIG. 1159		FIG. 1184	
			Cipher	Price	Cipher	Price
1	48 in. to 62 in.	1 in. pipe	Tiltist	\$3.00	Ondkip	\$3.00
2	58 " 72 "	1 " "	Tiltito	3.40	Ondkos	3.40
3	70 " 84 "	1 " "	Tiltiul	3.75	Ondkub	3.75

Curb Block

Fig. 827 shows a very neat and serviceable Curb Block to be used in connection with Figs. 1159 and 1184 Curb Boxes. The block measures 7 x 7 inches, with opening to receive cap of Curb Box.

Price.

Fig. 827, each.....(Wheelk) \$0.60



Fig. 1184

Goulds New Steel Amalgam Bell

Complete with Hangings, as Shown in Cut



Fig. 758

Fig. 758 represents our well-known and popular Steel Amalgam Bell. We believe they are superior to many more expensive makes and that they will fully sustain the high standard of the "Goulds" Bell, and give the best satisfaction.

They are well adapted to farms, school houses, factories or any place where a cheap but serviceable Bell can be used.

Fig. 758. Sizes, Prices, Etc.

No.	Diameter	Approx. Weight	Cipher	Price
A 1	15 in.	40 lbs.	Vaporizing	\$4.00
A 2	17 "	50 "	Vaporiz	5.00
A 3	19 "	75 "	Vapory	7.50
A 4	21 "	100 "	Varanus	10.00

Goulds Large Steel Amalgam Bell

With Hangings and Frame

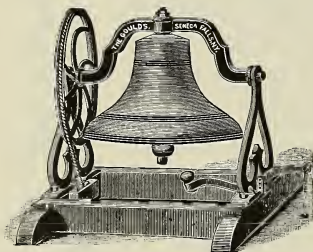


Fig. 353

Fig. 353 represents our Steel Amalgam Bell, as we mount them in the larger sizes for churches, school houses, factories, engine houses, etc. We have sent thousands of these Bells to various portions of the United States, as their cheapness places them in the reach of any church, and they have always given splendid satisfaction.

We send all our Bells to market richly gilded.

We put tolling attachment, as shown in cut, on Nos. 6 and 7 at \$4.00 extra, and on No. 8 at \$5.00 extra list.

Fig. 353. Sizes, Prices, Etc.

No.	Diameter	Approximate Weight of Bell Only	Approximate Weight Complete	Size of Frame	Cipher	Price
3	18½ in.	65 lbs.	172 lbs.	27 x 41½ in.	Fabric	\$16.00
21	21 "	80 "	186 "	30 x 41½ "	Fabrile	20.00
5	24 "	134 "	240 "	32½ x 41½ "	Fable	25.00
6	28 "	247 "	396 "	36 x 48 "	Faccl	40.00
7	30 "	325 "	487 "	36 x 48 "	Fact	50.00
8	33 "	414 "	689 "	38 x 48 "	Fade	75.00

Goulds Improved Burrall's Iron Corn Sheller

Made Either Right or Left Hand. Right Hand Sent Unless Otherwise Ordered.

We are the only manufacturers of the genuine Burrall's Corn Sheller, which has for years been conceded the best in the market, and warn the Trade against spurious machines. It is all iron, and very durable; it shells and separates perfectly clean; it will shell either large or small corn; and its repairs are cheap and easily placed.

Get only the Burrall Sheller with our name on, and avoid all trouble. For export we pack one Sheller in a case, or from six to eight in a hogshead.

Fig. 430. Price, Etc.

Approximate Weight	Cipher	Price
130 lbs.	Flew	\$3.60

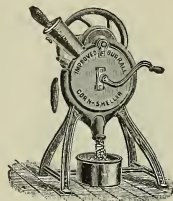
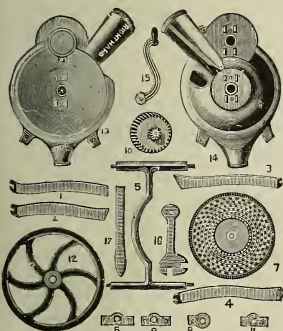


Fig. 430

Fig. 431

Nos. 1, 2, 3 or 4. Leg, each.....	\$0.35	No. 11, Feed Wheel Box, round side.....	.15
No. 5, Cross Bar.....	.60	No. 12, Balance Wheel.....	1.75
No. 6, Shell Wheel Box, flat side...	.15	No. 13, Flat Side.....	2.00
No. 7, Shell Wheel.....	1.75	No. 14, Round Side.....	2.00
No. 8, Shell Wheel Box, round side...	.15	No. 15, Handle.....	.40
No. 9, Feed Wheel Box, flat side...	.15	No. 16, Wrench.....	.15
No. 10, Feed Wheel.....	.80	No. 17, Spring.....	.65



Corn Sheller Pieces

Goulds Wrought-Iron Jack Screws

With Iron Stands. Swivel Caps

Diameter of Screw	Height Screwed Down	Will Raise	Cipher	Price
1½ in.	12 in.	6 in.	Fitch	\$6.00
1¾ " "	14 " "	7 " "	Fitz	7.00
2 " "	16 " "	9 " "	Fiveba	10.00
2½ " "	19 " "	10 " "	Fixif	14.00
3 " "	23 " "	12 " "	Flagol	22.50

Goulds Wine or Lard Press Screws

Fig. 379. Sizes, Prices, Etc.

Diameter	Length	Cipher	Price
1¼ in.	18 in.	Firm	\$5.75
1½ " "	18 " "	Firstmo	6.00
1¾ " "	24 " "	Fish	6.75
2½ " "	24 " "	Dagloam	12.50



Fig. 379



Fig. 383

Goulds Cast-Iron Square Sinks



Fig. 428

Size	Depth	Painted	Galvanized	Enameled
12 x 18 in.	6 in.	\$1.25	\$2.60	\$4.75
14 x 20 "	6 "	1.50	3.20	6.00
14 x 24 "	6 "	1.70		
16 x 24 "	6 "	1.80	4.00	6.50
15 x 27 "	6 "	2.00	4.25	7.25
16 x 28 "	6 "	2.10	4.50	7.50
16 x 30 "	6 "	2.25	4.75	7.75
17 x 28 "	6 "	2.20		
18 x 24 "	6 "	2.10	4.30	7.00
18 x 30 "	6 "	2.50	5.10	8.50
20 x 30 "	6 "	3.00	6.25	9.00
18 x 32 "	6 "	3.00	6.25	9.50
18 x 36 "	6 "	3.00	6.50	9.50
20 x 36 "	6 "	3.70	7.75	10.50
20 x 40 "	6 "	4.00	8.50	11.50
20 x 42 "	6 "	4.25	9.00	12.00
22 x 42 "	6 "	4.25	9.00	12.00
24 x 48 "	6 "	5.75	12.25	15.00
Patent Overflow Sinks with plug strainer, add to above list.....		\$1.20	\$1.25	\$1.50
Patent Overflow Sinks with open strainer, add to above list.....		1.00	1.00	1.00



Sectional View

Goulds Sewer Trap

No.	Size	Depth	Outlet	Painted	Enameled
1	16 x 16 in.	8 in.	2 in.	\$2.50	\$5.50



Fig. 403



Fig. 1405

Goulds Adjustable Sink Brackets

No.	Size	Painted	Galvanized
1	10½ x 14 in. wide	\$0.60 per pair	\$1.00 per pair
2	12 x 16 "	.75 "	1.25 "
3	16 x 18 "	1.00 "	1.50 "

Goulds Large Cesspool

With Bell Trap

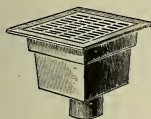


Fig. 369

Size	Depth	Outlet	Painted	Galvanized	Enameled
16 x 16 in.	8½ in.	4 in.	\$4.50	\$10.00	\$13.00

Goulds Cellar Trap



Fig. 417

No.	Size	Depth	Outlet	Price
1	9 x 9 in.	2¼ in.	2 in.	\$1.25
2	12 x 12 "	2¼ "	2 "	1.60

Goulds Sewer Trap and Slop Sink

With Trap and Strainer



Fig. 416

No.	Size	Depth	Outlet	Painted
1	12 x 12 in.	6 in.	2 in.	\$2.25
2	15 x 15 "	11½ "	2 "	3.35
3	18 x 18 "	12 "	3 "	4.25
4	20 x 20 "	12 "	3 "	5.25

Goulds Slop Sinks



Fig. 419

No.	Size	Depth	Painted	Galvanized	Enameled
1	16 x 16 in.	10 in.	\$ 2.70	\$ 5.25	\$ 7.50
2	20 x 14 "	12 "	3.50	6.50	8.50
3	20 x 16 "	12 "	4.00	8.25	10.00
4	24 x 18 "	12 "	4.50	9.00	11.00
5	24 x 20 "	12 "	5.00	9.50	11.50
6	23 x 15 "	15 "	4.25	8.50	11.00
7	30 x 20 "	12 "	8.00	15.00	16.00
8	36 x 20 "	12 "	10.00	19.00	20.00
9	48 x 20 "	17 "	20.00	36.00	38.00
If with Patent Overflow add, each.....			1.00	1.00	1.00
If with Patent Overflow and Plug Strainer add, each.....			1.25	1.25	1.50

Sink Strainer



Fig. 435

Diam.	Painted per doz.	Galv. per doz.	Enam. per doz.
4¾ in.	\$1.50	\$2.60	\$3.00

Open End Sink Coupling

For Lead Pipe



Fig. 434

Fig. 434, Painted... \$1.50
Fig. 434, Galv..... 2.00

Sink Bolt



Fig. 368

Fig. 368, per doz... \$0.40
Fig. 368, per 100... 2.00
Short Brass Sink
Bolts, per dozen. 1.00



WROUGHT IRON PIPE & CASING

Butt Welded, proved to 300 pounds per square inch, hydraulic pressure,
Lap Welded, proved to 500 pounds per square inch, hydraulic pressure.

*Standard, Extra and Double Extra Strong Wrought-Iron Pipe, Revised Lists, Adopted
February 15, 1900. Sizes, Weights, Etc.*

Nominal Size (inside diameter) in.	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8
STANDARD PIPE															
PRICE PER FT., Standard, Black. }	\$.055	.055	.055	.085	.115	.165	.225	.27	.36	.575	.755	.95	1.08	1.30	1.45
“ “ Standard, Galv.. }															
Actual Outside Diameter, in.....	.405	.54	.675	.84	1.05	1.315	1.66	1.9	2.37	2.87	3.5	4.0	4.5	5.0	5.56
Nominal Weight, per ft., lbs.....	.24	.42	.56	.84	1.12	1.67	2.24	2.68	3.61	5.74	7.54	9.00	10.66	12.49	14.5
No. of Threads per in. of Screw...	27	18	18	14	14	11½	11½	11½	11½	8	8	8	8	8	8
X STRONG PIPE															
PRICE PER FT.	\$.11	.11	.11	.12	.15	.22	.30	.36	.50	.81	1.05	1.33	1.50	1.95	2.16
Actual Outside Diameter, in.....	.405	.54	.675	.84	1.05	1.315	1.66	1.9	2.37	2.87	3.5	4.	4.5	5.0	5.56
Nominal Inside Diameter, in.....	.205	.294	.421	.542	.736	.951	1.27	1.49	1.93	2.31	2.89	3.35	3.81	4.28	4.81
Nominal Weight, per ft., lbs.....	.29	.54	.74	1.09	1.39	2.17	3.00	3.63	5.02	7.67	10.25	12.47	14.79	18.22	20.54
XX STRONG PIPE															
PRICE PER FT.....	.....	.....	.....	\$ .25	.30	.37	.52	.65	.95	1.37	1.92	2.45	2.85	3.30	3.80
Actual Outside Diameter, in.....	.....	.....	.....	.84	1.05	1.315	1.66	1.9	2.37	2.87	3.5	4.0	4.5	5.0	5.56
Nominal Inside Diameter, in.....	.....	.....	.....	.224	.422	.587	.885	1.08	1.49	1.75	2.28	2.71	3.13	3.56	4.06
Nominal Weight, per ft., lbs.....	.....	.....	.....	1.70	2.44	3.65	5.20	6.40	9.20	13.68	18.56	22.75	27.48	32.53	38.12

Standard Weight Lap-Welded Casing, Screw Socket

Revised List, Adopted February 22, 1899.

Nominal Size (in. diam.) in. ..	2	2½	2½	3	3½	3½	3½	4	4½	4½	4½	5	5	5½	5½	6½	6½	7½	7½	8½	8½	9½	10½
PRICE PER FT.....	\$.23	.29	.32	.35	.41	.45	.48	.56	.60	.64	.68	.78	.82	.87	1.05	1.16	1.24	1.36	1.55	1.61	1.76	2.20	2.68
Actual Outside Diameter.	2½	2½	2½	3	3½	3½	3½	4	4½	4½	4½	5	5½	5½	6	6½	7	7½	8	8½	9	10	11
Nominal Weight, per ft.	2.22	2.82	3.13	3.45	4.10	4.45	4.78	5.56	6.0	6.36	6.73	7.8	8.2	8.62	10.46	11.58	12.34	13.55	15.41	16.07	17.60	21.90	25.72
No. Threads per in. of Screw.	14	14	14	14	14	14	14	14	14	14	14	17	14	14	14	14	14	14	11½	11½	11½	11½	11½

Rubber Water Hose

Internal Diameter, Inches	2-PLY	3-PLY	4-PLY	5-PLY	6-PLY
	Conducting, per foot	Hydrant, per foot	Engine, per foot	Engine, per foot	Engine, per foot
$\frac{1}{2}$	\$0.20	\$0.25	\$0.30	\$0.37	\$0.45
$\frac{3}{4}$	.25	.30	.37	.46	.55
1	.33	.40	.50	.62	.75
$1\frac{1}{4}$	.42	.50	.62	.77	.93
$1\frac{1}{2}$	.50	.60	.75	.93	1.12
2	.66	.80	1.00	1.25	1.50
$2\frac{1}{2}$	.....	1.00	1.25	1.56	1.87
3	.....	.....	1.50	1.87	2.25
$3\frac{1}{2}$	.....	.....	.....	2.18	2.62
4	.....	.....	.....	.....	3.00



Linen Hose, Seamless, Unlined and Rubber Lined

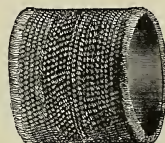
Internal Diameter, Inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
"Standard" Unlined, per foot	\$0.20	\$0.22	\$0.25	\$0.30	\$0.35	\$0.50
"Standard" Rubber Lined, per foot35	.30	.55	.65	.75	1.00
Underwriters, Unlined, per foot27	.30	.33	.42	.50	.....



Cotton Mill Hose

Seamless Woven and Rubber Lined

Internal Diameter, Inches	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Price per foot	\$0.35	\$0.45	\$0.50	\$0.60	\$0.70	\$1.00



Spiral Rubber Suction Hose

Internal Diameter, Inches	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	8	10
On Spiral Tinned Iron, per foot	\$1.50	\$2.30	\$3.10	\$4.00	\$4.90	\$5.80	\$6.70	\$7.60	\$9.50	\$15.00	\$20.00



Hard Rubber and Agricultural Smooth-Bore Suction Hose

Internal Diameter, Inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Hard Rubber Suction Hose, per foot	.....	.....	.....	.....	.....	.....	.....	.....
Agricultural Suction Hose, per foot	\$0.55	\$0.65	\$0.75	\$0.93	\$1.13	\$1.50	\$1.88	\$3.50

Fig. 504, Brass Hose Couplings



Fig. 504

Size, Inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1
Fig. 504, per dozen.....	\$2.50	\$2.50	\$3.00	\$3.00	\$4.50

Fig. 497, Brass Hose Couplings

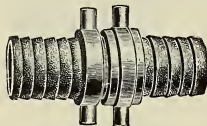


Fig. 497

Size, Inches.....	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5	6
Fig. 497, per dozen....	\$10.00	\$14.00	\$30.00	\$48.00	\$76.00	\$150.00	\$250.00	\$350.00

Improved Double Hose Clamps

Size of Hose, in inches, 3 ply....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Per dozen.....	\$0.60	\$0.60	\$2.00	\$2.50	\$3.00	\$4.00	\$7.00



Fig. 1272

Fig. 622, Globe Suction Basket, to Tie On



Fig. 622

Size, Inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Black	\$0.50	\$0.50	\$0.50	\$0.50	\$0.65	\$1.00	\$1.50
Galvanized Iron..	.60	.60	.60	.60	.75	1.25	1.00
Brass	2.00	2.00	2.25	2.25	2.75	3.50	5.00

Brass Suction Baskets

Fig. 750. To Tie On.

Fig. 751. To Screw On.



Fig. 750

Size, Inches.	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Price	\$2.50	\$3.00	\$3.25	\$4.00	\$5.00

	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
	\$7.50	\$7.50	\$8.50	\$10.00	\$15.00	\$20.00



Fig. 751

"Gem" Graduating Spray Pipe

Hose Thread, Inches.	$\frac{3}{4}$	1
Per doz.....	\$10.00	\$15.00

Hose Nozzle, to Tie On

Thread and Length, Inches	$\frac{3}{4} \times 3\frac{1}{2}$	1 x 4	1 $\frac{1}{4}$ x 4 $\frac{1}{2}$
Per doz.....	\$3.50	\$4.00	\$6.50



Fig. 357.



Fig. 502.

Hose Pipe, Screw Tip

Thread and Length, Inches	$\frac{3}{4} \times 6$	1 x 7 $\frac{1}{4}$	1 $\frac{1}{4}$ x 12
Per doz.....	\$8.00	\$9.00	\$12.00



Fig. 499,

Large Hose Pipe, Screw Tip

Thread and Length, Inches	1 $\frac{1}{4}$ x 12 $\frac{1}{2}$	1 $\frac{1}{2}$ x 18	2 x 20	2 $\frac{1}{2}$ x 15	2 $\frac{1}{2}$ x 30
Per doz.....	\$21.00	\$36.00	\$50.00	\$75.00	\$144.00



Fig. 496.

Hose Pipe With Cock on End, Screw Tip

Thread and Length, Inches	$\frac{3}{4} \times 8$	$\frac{3}{4} \times 12$	1 x 2	1 $\frac{1}{4}$ x 12	1 $\frac{1}{2}$ x 12 $\frac{1}{2}$	2 x 30
Per doz.....	\$13.00	\$18.00	\$20.00	\$40.00	\$55.00	\$136.00



Fig. 501.

Brass Hose Pipe Sprinklers

Diameter of Face, Inches	1 $\frac{3}{8}$	1 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{3}{8}$	2 $\frac{1}{4}$
Size Hose Pipe	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2
Price, per doz.....	\$3.50	\$3.50	\$6.00	\$6.00	\$9.00



Fig. 503.

Stillson's Pipe Wrench



Fig. 362

Length Open, in.	6	8	10	14	18	24	36	48
Takes Wire from, in. . .	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	1
Takes Pipe to, in.	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	$3\frac{1}{2}$	5
Price, each	\$2.00	\$2.00	\$3.25	\$3.00	\$4.00	\$6.00	\$12.00	\$18.00
Extra Frames, each. . .	.25	.25	.33	.45	.55	.65	.75	1.00
Nuts, each ....	.20	.20	.27	.35	.42	.50	.65	.80
Jaws, each. ....	.67	.67	.75	1.00	1.33	2.00	4.00	6.00

Brown's Adjustable Tongs

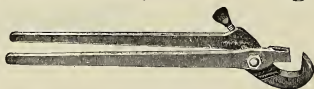


Fig. 77.

Number.	1	1½	2	3	4	5
Takes Pipe from, in. . .	$\frac{1}{2}$ to $\frac{3}{4}$	$\frac{3}{4}$ to 1	$\frac{1}{2}$ to $1\frac{1}{4}$	1 to 2	$1\frac{1}{2}$ to 3	$2\frac{1}{2}$ to 4
Price, each.	\$0.60	\$0.75	\$0.85	\$1.20	\$2.70	\$6.00

Vulcan Adjustable Chain Pipe Wrench



Fig. 370

Size.	No. 10	No. 11	No. 12	No. 13	No. 13½	No. 14	No. 15
Capacity, size pipe.	$\frac{1}{2}$ to $\frac{3}{4}$ in.	$\frac{1}{2}$ to $1\frac{1}{2}$ in.	$\frac{1}{2}$ to $2\frac{1}{2}$ in.	$\frac{1}{2}$ to 4 in.	1 to 6 in.	$1\frac{1}{2}$ to 8 in.	2 to 12 in.
Price, with Flat Link Chain, each. . .	\$2.50	\$3.50	\$5.00	\$7.00	\$9.00	\$11.00	\$18.00
Price, with Cable Chain, each.	2.25	3.25	4.50	6.25	7.75	9.50	16.00
Extra Flat Link Chain, each. ....	.75	1.00	1.50	2.50	3.25	4.00	6.00
Cable Chain, each ....	.50	.75	1.00	1.75	2.00	2.50	4.00
Jaws, (Pair)	1.00	1.75	2.75	4.00	4.75	5.50	7.50

B. & C. Combination Pipe Wrench



Fig. 305

Bright, with Long Nut

10 in., for pipe from $\frac{1}{4}$ to 1 in., per doz.	\$25.25
12 " " " $\frac{1}{2}$ to $1\frac{1}{2}$ " " " ..	28.50
15 " " " $\frac{3}{4}$ to 2 " " " ..	40.50
18 " " " $\frac{1}{2}$ to 3 " " " ..	66.00

"Westcott" Adjustable "S" Pipe Wrench



Fig. 1398

Size.	6 inch	8 inch	10 inch	12 inch	14 inch
Takes Pipe from, in. . .	$\frac{1}{2}$ to $\frac{3}{8}$	$\frac{3}{8}$ to $\frac{1}{2}$	$\frac{1}{2}$ to 1	$\frac{1}{2}$ to $1\frac{1}{2}$	$\frac{1}{2}$ to $1\frac{1}{2}$
Price, each.	\$1.00	\$1.25	\$1.50	\$2.00	\$2.50

Gas Pipe Stock and Die

No.	0	1	1½	1¾	WITH LEADER SCREW	
					2	3
Dies furnished with each plate	½ to ½	¾ to 1	¾ to 1¼	1 to 1½	1¼ to 2	2½ and 3
Dimensions of Dies.....	2 x ½	2½ x ¾	3 x ¾	3 x ¾	4 x 7½	5 x 1½
Complete with R. H. Dies...	\$9.50	\$15.00	\$13.50	\$13.50	\$20.00	\$43.00
Plates without Dies.....	3.50	5.00	6.00	6.00	9.50	25.00
Extra Dies, R. or L.....	1.50	2.00	2.50	2.50	3.50	9.00
Extra Bushings.....	.25	.35	.45	.45	.60	1.00
Extra Die Frames.....		.30	.40	.40	.50	.60



Fig. 372

Pump Stock and Die

No. 12, 2 prs. Dies, cutting ¾, 14 thd.; 7-16, 12 thd.....\$3.00
 No. 13, 3 prs. Dies, cutting ¾, 14 thd.; 7-16, 12 thd.; ½, 12 thd... 3.50



Fig. 757

Barnes' Pipe Cutter



Fig. 317

Enterprise Pipe Vise

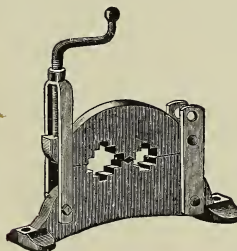


Fig. 374

Malleable Hinge Vise

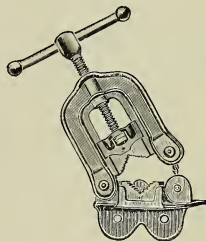


Fig. 308

No.....	1	2	3	4	5
Cuts Pipe from, in.	½ to 1	½ to 2	1½ to 3	3 to 4	4 to 6
Price, each.....	\$4.50	\$6.00	\$10.00	\$20.00	\$30.00
" extra Wheels,					
each....	.25	.30	.40	.50	.75
" Wheel					
Pins, each...	.10	.10	.10	.18	.18

For ¾ to 2 in. pipe.....\$3.00

No. 1, ½ to 2 in.....\$10.00
 No. 2, ¼ to 3 "..... 14.00

Useful Information—Water

Doubling the diameter of a pipe increases its capacity four times. Friction of liquids in pipes increases as the square of the velocity.

The mean pressure of the atmosphere at tide level is usually estimated at 14.7 lbs. per square inch, so that with a perfect vacuum it will sustain a column of mercury 29.9 inches, or column of water 33.9 feet high. In ordinary practice we recommend Pumps be placed not over twenty feet above water supply, and even nearer, where possible.

To find the capacity of any single-acting cylinder look in the Table on page 283, or square the diameter (in inches of the cylinder), multiply this by .7854, and the result (which is the area of the circle of cylinder) by the length of stroke in inches. This gives the capacity in cubic inches per stroke. Multiply this by the number of strokes per minute and divide the product by 231 (the number of cubic inches in a gallon of water). The result will be capacity or gallons of water the cylinder will discharge per minute.

To find the pressure in pounds per square inch of a column of water look in the Table on page 284, or multiply the height of the column in feet by .434. Approximately we say that every foot elevation is equal to one-half pound pressure per square inch; this agrees for ordinary friction.

To find the horse power necessary to elevate water to a given height look in the Tables on page 181, or multiply the number of gallons per minute by total number of feet water is raised (that is, from surface of the water to the highest point to which the water is raised), and divide by 4,000 and you have the horse power. One horse power is equal to about five men. To the theoretical power a liberal allowance for friction, etc., always should be added.

Weight and Capacity of Different Standard Gallons of Water.

	Cubic Inches in a Gallon	Weight of a Gallon in Pounds	Gallons in a Cubic Foot	Weight of a Cubic Foot of Water, English Standard, Pounds Avoirdupois
Imperial or English.....	277.274	10.00	6.232102	62.231
United States.....	231	8.33111	7.470519	.....

Barometric Pressure at Different Altitudes

With Equivalent Head of Water and the Vertical Suction Lift of Pumps.

Altitude	Barometric Pressure	Equivalent Head of Water	Practical Suction Lift of Pumps	Altitude
Sea Level.....	14.70 lbs. per sq. in.	33.95 ft.	25 ft.	Sea Level.....
¼ mile (1320 ft.) above sea level	14.02 " "	32.38 " "	24 " "	¼ mile (1320 ft.) above sea level
½ " (2640 ft.) " " "	13.33 " "	30.79 " "	23 " "	½ " (2640 ft.) " " "
¾ " (3960 ft.) " " "	12.66 " "	29.24 " "	21 " "	¾ " (3960 ft.) " " "
1 " (5280 ft.) " " "	12.02 " "	27.76 " "	20 " "	1 " (5280 ft.) " " "
1¼ " (6600 ft.) " " "	11.42 " "	26.38 " "	19 " "	1¼ " (6600 ft.) " " "
1½ " (7920 ft.) " " "	10.88 " "	25.13 " "	18 " "	1½ " (7920 ft.) " " "
2 " (10560 ft.) " " "	9.88 " "	22.82 " "	17 " "	2 " (10560 ft.) " " "

Table of Capacity of Pumps

Dia. of Cyl. in	Area Square Inches	LENGTH OF STROKE IN INCHES																Dia. of Cyl. In.	
		2	3	4	5	6	8	10	12	14	15	16	18	20	24	30	36		
		Capacity per Stroke in Gallons, or Decimal Parts Thereof																	
1	1/2	.196	.002	.003	.003	.004	.005	.007	.009	.01	.012	.013	.014	.015	.017	.02	.026	.031	1/2
	3/8	.307	.003	.004	.005	.007	.008	.011	.013	.016	.019	.02	.021	.024	.027	.032	.04	.048	3/8
	1/4	.442	.004	.006	.008	.01	.011	.015	.019	.023	.027	.029	.031	.034	.038	.046	.057	.068	1/4
	7/8	.601	.005	.008	.01	.013	.016	.021	.026	.031	.036	.039	.042	.047	.052	.062	.078	.094	7/8
1	1	.785	.007	.01	.014	.017	.02	.027	.034	.041	.048	.051	.054	.061	.068	.082	.102	.122	1
	1 1/8	.994	.009	.013	.017	.022	.026	.034	.043	.052	.06	.065	.069	.077	.086	.103	.129	.154	1 1/8
	1 1/4	1.227	.011	.016	.021	.027	.032	.043	.052	.064	.074	.08	.085	.096	.106	.127	.159	.192	1 1/4
	1 1/2	1.485	.013	.019	.026	.032	.039	.051	.064	.077	.089	.096	.103	.116	.128	.154	.192	.232	1 1/2
	1 3/4	1.767	.015	.023	.031	.038	.046	.061	.077	.092	.107	.115	.122	.138	.153	.184	.231	.276	1 3/4
	2	2.405	.021	.031	.042	.052	.063	.083	.104	.125	.146	.156	.167	.187	.208	.25	.312	.374	2
2	2 1/2	3.142	.027	.041	.054	.068	.082	.109	.136	.163	.19	.204	.218	.245	.272	.326	.408	.49	2 1/2
	2 3/4	3.976	.034	.052	.069	.086	.103	.138	.172	.206	.241	.258	.275	.31	.344	.413	.516	.62	2 3/4
	2 1/2	4.909	.043	.064	.085	.106	.128	.17	.213	.255	.298	.319	.34	.383	.425	.51	.639	.766	2 1/2
	2 3/4	5.94	.051	.077	.103	.129	.154	.206	.257	.309	.36	.386	.411	.463	.514	.617	.771	.926	2 3/4
3	3	7.000	.061	.092	.122	.153	.184	.245	.306	.367	.428	.459	.49	.551	.612	.734	.918	1.102	3
	3 1/4	8.296	.072	.108	.144	.18	.215	.287	.359	.431	.503	.539	.575	.647	.718	.862	.1077	1.294	3 1/4
	3 1/2	9.621	.083	.125	.167	.208	.25	.333	.417	.5	.583	.625	.666	.75	.833	1	1.251	1.50	3 1/2
	3 3/4	11.045	.095	.143	.191	.239	.287	.382	.478	.574	.669	.717	.765	.861	.956	1.147	1.434	1.722	3 3/4
4	4	12.560	.109	.163	.218	.272	.326	.435	.544	.653	.762	.816	.87	.979	1.088	1.306	1.632	1.958	4
	4 1/4	14.186	.123	.184	.246	.307	.368	.491	.614	.737	.86	.921	.982	1.105	1.228	1.473	1.842	2.21	4 1/4
	4 1/2	15.904	.138	.207	.275	.344	.413	.551	.689	.826	.964	1.033	1.102	1.239	1.377	1.652	2.067	2.478	4 1/2
	4 3/4	17.721	.153	.23	.307	.384	.46	.614	.767	.92	1.073	1.15	1.227	1.38	1.534	1.84	2.301	2.76	4 3/4
5	5	19.635	.17	.255	.34	.425	.51	.68	.85	1.02	1.19	1.275	1.36	1.53	1.7	2.04	2.55	3.06	5
	5 1/4	21.648	.187	.281	.375	.469	.562	.75	.937	1.124	1.311	1.405	1.499	1.686	1.874	2.248	2.811	3.372	5 1/4
	5 1/2	23.758	.206	.309	.411	.514	.617	.823	1.029	1.234	1.44	1.543	1.646	1.851	2.057	2.408	3.087	3.702	5 1/2
	5 3/4	25.907	.225	.337	.45	.562	.674	.890	1.124	1.348	1.573	1.686	1.798	2.022	2.248	2.606	3.372	4.044	5 3/4
6	6	28.274	.245	.367	.49	.612	.734	.979	1.224	1.469	1.714	1.836	1.958	2.203	2.448	2.938	3.672	4.400	6
	6 1/4	30.68	.266	.398	.531	.664	.797	1.062	1.328	1.593	1.859	1.992	2.124	2.39	2.656	3.186	3.984	4.78	6 1/4
	6 1/2	33.183	.287	.431	.574	.718	.861	1.149	1.436	1.796	2.011	2.155	2.298	2.589	2.873	3.447	4.308	5.178	6 1/2
	6 3/4	35.785	.309	.465	.62	.775	.929	1.239	1.549	1.858	2.168	2.323	2.479	2.788	3.008	3.716	4.647	5.576	6 3/4
7	7	38.485	.333	.5	.666	.833	1	1.333	1.666	1.999	2.332	2.499	2.666	2.999	3.332	3.998	4.908	5.998	7
	7 1/4	44.179	.383	.574	.765	.956	1.148	1.53	1.913	2.295	2.678	2.869	3	3.443	3.825	4.59	5.739	6.886	7 1/4
	7 1/2	47.173	.408	.613	.817	1.021	1.225	1.633	2.042	2.45	2.858	3.063	3.266	3.674	4.084	4	6.126	7.388	7 1/2
	8	50.266	.435	.653	.87	1.088	1.306	1.741	2.176	2.611	3.046	3.264	3.482	3.917	4.352	5.222	6.528	7.834	8
	8 1/2	56.745	.49	.735	.98	1.225	1.47	1.96	2.45	2.94	3.43	3.675	3.92	4.41	4.9	5.888	7.35	8.82	8 1/2
	8 3/4	60.132	.52	.78	1.04	1.3	1.56	2.08	2.6	3.12	3.64	3.9	4.16	4.68	5.2	6.24	7.8	9.36	8 3/4
9	9	63.617	.551	.826	1.101	1.377	1.652	2.203	2.754	3.305	3.856	4.131	4.406	5.057	5.508	6.61	8.262	10.114	9
	9 1/4	70.882	.612	.918	1.224	1.53	1.83	2.448	3.06	3.672	4.284	4.59	4.896	5.51	6.12	7.344	9.18	11.02	9 1/4
	9 1/2	74.662	.646	.97	1.293	1.616	1.939	2.586	3.232	3.878	4.525	4.848	5.171	5.818	6.464	7.757	9.666	11.636	9 1/2
	10	78.54	.68	1.02	1.36	1.7	2.04	2.72	3.4	4.08	4.76	5.1	5.44	6.12	6.8	8.16	10.2	12.24	10
10	10	95.033	.823	1.234	1.645	2.057	2.464	3.291	4.114	4.937	5.76	6.171	6.582	7.405	8.228	9.874	12.342	14.81	11
	10 1/2	103.869	.90	1.351	1.80	2.252	2.701	3.60	4.505	5.406	6.30	6.75	7.2	8.1	9	10.8	13.515	16.2	11 1/2
	11	113.098	.979	1.468	1.958	2.448	2.938	3.917	4.896	5.875	6.854	7.344	7.833	8.813	9.792	11.75	14.688	17.626	12
	12	132.733	1.149	1.723	2.297	2.872	3.448	4.596	5.745	6.894	8.042	8.616	9.192	10.34	11.49	13.78	17.235	20.68	13
	13	153.938	1.332	1.998	2.665	3.331	3.997	5.33	6.663	7.994	9.328	9.933	10.66	11.99	13.32	15.98	19.989	23.98	14
	14	165.13	1.434	2.142	2.856	3.574	4.284	5.718	7.148	8.578	10.0	10.71	11.424	12.852	14.28	17.136	21.444	25.704	14 1/2
	15	176.715	1.529	2.294	3.059	3.824	4.589	6.119	7.649	9.178	10.7	11.47	12.23	13.76	15.29	18.35	22.947	27.52	15
	16	201.062	1.74	2.61	3.48	4.35	5.22	6.96	8.703	10.44	12.18	13.05	13.92	15.66	17.40	20.88	26.109	31.32	16
	18	254.47	2.202	3.303	4.404	5.505	6.606	8.808	11.01	13.21	15.41	16.51	17.61	19.81	22.02	26.42	33.03	39.72	18
20	20	314.16	2.720	4.08	5.44	6.8	8.16	10.88	13.6	16.32	19.04	20.4	21.76	24.48	27.2	32.04	40.8	48.06	20

Friction of Water in Pipes

Friction loss in pounds pressure per square inch for each 100 feet of length in different sizes of clean iron pipe, discharging given quantities of water per minute.

Gallons per Minute	SIZES OF PIPES.—INSIDE DIAMETER													
	¾ In.	1 In.	1¼ In.	1½ In.	2 In.	2½ In.	3 In.	4 In.	5 In.	6 In.	7 In.	8 In.	10 In.	12 In.
5	3.3	0.84	0.31	0.12	0.03	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	13.0	3.16	1.05	0.47	0.12	0.03	.....	.....	.....	.....	.....	.....	.....	.....
15	28.7	6.98	2.38	0.97	0.27	0.06	.....	.....	.....	.....	.....	.....	.....	.....
20	50.4	12.3	4.07	1.66	0.42	0.13	0.03	.....	.....	.....	.....	.....	.....	.....
25	78.0	19.0	6.40	2.62	0.67	0.21	0.10	.....	.....	.....	.....	.....	.....	.....
30	.....	27.5	9.15	3.75	0.91	0.30	0.12	0.03	.....	.....	.....	.....	.....	.....
35	.....	37.0	12.4	5.05	1.26	0.42	0.14	0.05	.....	.....	.....	.....	.....	.....
40	.....	48.0	16.1	6.52	1.60	0.51	0.17	.....	.....	.....	.....	.....	.....	.....
45	.....	.....	20.2	8.15	2.00	0.62	0.27	0.07	.....	.....	.....	.....	.....	.....
50	.....	.....	24.9	10.0	2.44	0.81	0.35	0.09	0.03	.....	.....	.....	.....	.....
75	.....	.....	50.1	22.4	5.32	1.80	0.74	0.21	0.06	0.03	.....	.....	.....	.....
100	.....	.....	.....	39.0	9.46	3.20	1.31	0.33	0.12	0.05	.....	.....	.....	.....
125	.....	.....	.....	.....	14.9	4.89	1.99	0.51	0.17	0.07	.....	.....	.....	.....
150	.....	.....	.....	.....	21.2	7.0	2.55	0.69	0.25	0.10	0.02	.....	.....	.....
175	.....	.....	.....	.....	28.1	9.46	3.85	0.95	0.34	0.14	.....	0.03	.....	.....
200	.....	.....	.....	.....	37.5	12.47	5.02	1.22	0.42	0.17	0.08	0.05	0.01	.....
250	.....	.....	.....	.....	.....	19.66	7.76	1.89	0.65	0.26	0.13	0.07	0.03	.01
300	.....	.....	.....	.....	.....	28.06	11.2	2.66	0.93	0.37	0.18	0.09	0.04	.....

Gallons	3 In.	4 In.	5 In.	6 In.	7 In.	8 In.	10 In.	12 In.	14 In.	16 In.	18 In.	20 In.	24 In.	30 In.
350	15.2	3.65	1.28	.50	.2	.12	.05	.02	.....	.....	.....	.....	.....	.....
400	19.5	4.73	1.68	.65	.32	.16	.06	.....	.....	.....	.....	.....	.....	.....
450	25	6.01	2.10	.81	.42	.20	.07	.03	.....	.....	.....	.....	.....	.....
500	30.8	7.43	2.70	.96	.49	.25	.09	.04	.017	.....	.....	.....	.....	.....
600	.....	10.6	3.45	1.72	.86	.348	.13	.05	.024	.....	.....	.....	.....	.....
750	.....	.....	5.40	2.21	1.11	.53	.18	.08	.038	.....	.....	.....	.....	.....
1000	.....	.....	9.60	3.88	1.91	.94	.32	.13	.062	.036	.02	.....	.....	.....
1250	.....	.....	.....	1.46	.....	.49	.20	.....	.....	.....	.....	.....	.....	.....
1500	.....	.....	.....	2.09	.....	.70	.39	.....	.071	.....	.....	.....	.....	.....
1750	.....	.....	.....	.....	.....	.95	.38	.....	.....	.....	.....	.....	.....	.....
2000	.....	.....	.....	.....	.....	1.23	.49	.234	.123	.....	.....	.....	.....	.....
2500	.....	.....	.....	.....	.....	.....	.77	.362	.188	.107	.....	.....	.....	.....
3000	.....	.....	.....	.....	.....	.....	.515	.267	.15	.....	.....	.....	.....	.....
3500	.....	.....	.....	.....	.....	.....	.607	.365	.204	.124	.....	.....	.....	.....
4000	.....	.....	.....	.....	.....	.....	.91	.47	.264	.158	.067	.022	.....	.....
4500	.....	.....	.....	.....	.....	.....	.....	.593	.33	.20	.08	.027	.....	.....
5000	.....	.....	.....	.....	.....	.....	.....	.73	.41	.244	.102	.035	.....	.....

Feet Head of Water into Pressure, per Square Inch.

Feet Head	Pounds per Sq. In.	Feet Head	Pounds per Sq. In.	Feet Head	Pounds per Sq. In.
1	.43	60	25.99	200	86.62
2	.87	70	30.32	225	97.45
3	1.30	80	34.65	250	108.27
4	1.73	90	38.98	275	119.10
5	2.17	100	43.31	300	129.93
6	2.60	110	47.64	325	140.75
7	3.03	120	51.97	350	151.58
8	3.40	130	56.30	400	173.24
9	3.90	140	60.63	450	216.55
10	4.33	150	64.96	500	259.85
20	8.66	160	69.29	700	303.16
30	12.99	170	73.63	800	346.47
40	17.32	180	77.96	900	389.78
50	21.65	190	82.29	1,000	433.09

Pressure per Square Inch into Feet Head of Water.

Pounds per Sq. In.	Feet Head	Pounds per Sq. In.	Feet Head	Pounds per Sq. In.	Feet Head
1	2.31	40	92.36	170	392.52
2	4.62	50	115.45	180	415.61
3	6.93	60	138.54	190	438.90
4	9.24	70	161.63	200	461.78
5	11.54	80	184.72	225	519.51
6	13.85	90	207.81	250	577.24
7	16.16	100	230.90	275	643.03
8	18.47	110	253.98	300	692.69
9	20.78	120	277.07	325	750.41
10	23.09	125	288.62	350	808.13
15	34.63	130	300.16	375	865.89
20	46.18	140	323.25	400	922.58
25	57.72	150	346.34	500	1154.48
30	69.27	160	369.43	1,000	2368

Pump Repairs

In the following Tables will be found a partial price list of Staple Pump Repairs.
Repairs for Pumps not included in Tables will be quoted upon application.

Goulds Cistern Pumps, Figs. 198, 199, 200, 201, 202½, 1165.

No.	0	1	2½	3½	4	5	6	8
DIAM. CYLINDER, INCHES	2	2½	2½	2½	3	3½	3½	4
Lever or Handle.....	\$0.50	\$0.50	\$0.50	\$0.60	\$0.70	\$1.00	\$1.25	\$1.50
Fulcrum or Bearer Top.....	.70	.70	.70	.75	.80	.90	1.10	1.50
Cylinder.....	1.45	1.60	1.80	1.90	2.25	2.40	3.00	4.00
Brass-Lined Cylinder.....	3.00	3.25	3.50	4.00	4.25	5.00	6.00	8.50
Brass Cylinder.....	5.00	5.50	6.00	6.50	7.00	8.00	10.00	13.50
Iron Top Section for B. C. Pump.....	1.00	1.00	1.15	1.25	1.50	2.00	2.50	3.50
Base, Figs. 198, 199, 200, 201.....	.75	.75	.75	.85	1.00	1.00	1.25	1.75
Base with Brass Valve Seat, Fig. 1165.....	..	..	..	..	..	1.50	2.25	..
Bottom Cap, Fig. 202½.....	.50	.50	.50	.50	.50	.75	.75	1.00
Plunger with Rod.....	.70	.75	.80	.90	1.00	1.15	1.30	1.50
Plunger Rod only.....	.15	.15	.15	.15	.15	.15	.15	.15
Plunger Cage.....	.30	.35	.35	.40	.45	.50	.60	.70
Plunger Follower.....	.30	.35	.35	.40	.45	.50	.60	.70
Plunger Poppet Valve.....	.10	.10	.10	.10	.15	.15	.15	.15
Brass Plunger Poppet Valve, Fig. 199, etc.....	.20	.20	.20	.20	.30	.30	.30	.30
Brass Plunger with Rod.....	1.40	1.50	1.60	1.80	2.00	2.30	2.60	3.00
Brass Plunger Cage.....	.60	.70	.70	.80	.90	1.00	1.20	1.40
Brass Plunger Follower.....	.60	.70	.70	.80	.90	1.00	1.20	1.40
Plunger Leather.....	.15	.15	.15	.15	.15	.20	.20	.20
Lower Valve complete.....	.25	.25	.25	.25	.25	.35	.35	.35
Lower Valve Leather.....	.15	.15	.15	.15	.15	.20	.20	.20
Lower Valve Weight.....	.10	.10	.10	.10	.10	.15	.15	.15
Lower Valve Screw and Washer.....	.05	.05	.05	.05	.05	.05	.05	.05
Brass Valve Seat and Tube.....	.75	.75	.75	.75	.75	1.00	1.25	1.75
Brass Tube for Iron or Lead Pipe.....	.50	.50	.50	.50	.50	.75	.75	1.00
Iron Pipe Nut.....	.35	.35	.35	.35	.35	.45	.45	.60
Lead Pipe Nut.....	.25	.25	.25	.25	.25	.35	.35	.50
Base, Lever, Bearer Bolts and Set Screws.....	.08	.08	.08	.08	.08	.08	.08	.08
Leather Ring Packing.....	.10	.10	.10	.10	.10	.10	.10	.10
Lugs (2) each, Fig. 1165 Plunger with Rod, Fig. 1165.....	.70	.80	.85	1.00	1.10	1.25	1.50	..
Plunger Rod only, Fig. 1165.....	.15	.20	.20	.25	.25	.25	.35	..
Plunger Cage, Fig. 1165 Plunger Follower, Fig. 1165.....	.45	.50	.55	.60	.65	.70	.80	..
Plunger Crimped Pack- ing, Fig. 1165.....	.15	.15	.15	.20	.25	.30	.35	..
Brass Valve Seat, Fig. 1165.....	.75	.75	1.00	1.25	1.25	..	..	..
Suction Nut, Fig. 1165.....	.25	.25	.25	.25	.25	.35	.35	..
Brass Lead Pipe Tube, Fig. 1165.....	.50	.50	.50	.50	.50	.75	.75	..

Goulds Pitcher Pumps, Figs. 1389, 205, 205½, 209, 208.

No.	1	2	3	4	5	6
DIAMETER CYLINDER, INCHES.....	2½	3	3½	4	4½	5
LEVER.....	\$0.60	\$0.60	\$0.60	\$0.60	\$0.75	\$1.00
Fulcrum or Bearer Top, Figs. 205, 209, 208, 1389, Open Top.....	.40	.40	.50	.50	.60	1.25
Fulcrum or Bearer Top, Figs. 205½, 209, 208, Closed Top.....	.60	.70	.85	.95	1.25	1.50
Cylinder.....	1.25	1.35	1.50	1.75	2.25	3.50
Brass-Lined or Porcelain-Lined Cylin- der.....	2.50	3.00	3.50	4.00	5.00	7.50
Base, Figs. 205, 205½, 209, 1389.....	.75	.85	1.00	1.25	1.75	3.25
Same for Brass Valve Seat.....	.80	.90	1.00	1.15	1.50	3.00
Base, Fig. 208.....	1.60	1.75	2.00	..	..	..
Plunger complete with Rod.....	.75	.80	.90	1.00	1.50	2.00
Plunger Rod.....	.10	.10	.10	.15	.15	.25
Plunger Cage.....	.35	.45	.60	.70	.80	1.00
Plunger Follower.....	.35	.45	.60	.70	.80	1.00
Plunger Poppet Valve.....	.10	.15	.15	.15	.20	.25
Plunger Leather.....	.15	.15	.20	.20	.20	.30
Lower Valve Complete.....	.25	.25	.35	.35	.35	.45
Lower Valve Leather.....	.15	.15	.20	.20	.20	.30
Lower Valve Weight.....	.10	.10	.15	.15	.15	.15
Lower Valve Screw and Washer.....	.05	.05	.05	.05	.05	.05
Brass Valve Seat and Tube.....	.75	.90	1.10	1.20	1.30	1.75
Iron Pipe Nut.....	.35	.35	.35	.45	.45	.75
Lead Pipe Nut.....	.25	.25	.25	.35	.35	.60
Brass Tube for Iron or Lead Pipe.....	.50	.50	.50	.75	.75	1.50
Brass Valve Plate.....	.50	.50	.50	.75	.75	1.00
Leather Ring Packing.....	.10	.10	.10	.15	.20	.25
Base, Set Screw and Lever Bolts.....	.08	.08	.08	.08	.08	.08

Goulds Well Pumps, Figs. 1018, 1019, and Pump Standards, Figs. 1023 and 1024.

Lever or Handle, Figs. 1018, 1023.....	\$1.00
Lever or Handle, Figs. 1019, 1024.....	1.25
Fulcrum or Bearer Top, Figs. 1018, 1023.....	.75
Fulcrum or Bearer Top, Figs. 1019, 1024.....	1.25
Stock or Standard only.....	3.50
Bearer Link, Figs. 1019, 1024.....	.25
Crosshead, Figs. 1019, 1024.....	.50
Long Plunger Rod, Fig. 1018.....	.50
Long Polished Plunger Rod, Fig. 1019.....	.75
Brace.....	.50
Extra Connecting Pipe and Rod, per foot.....	.50
Cylinder Repairs, see page 290.	..

Goulds "Star" Well Pumps, Figs. 550, 551, 552, 553, 554, 848, 848½.

Lever or Handle, Fig. 550.....	ALL SIZES.
Lever or Handle, Figs. 551, 552, 553, 848, 848½.....	\$1.00
Lever or Handle, Fig. 554.....	1.25
Fulcrum or Bearer Top, Fig. 550.....	1.40

[Continued on Next Page.]

PUMP REPAIRS—Continued

Gould's "Star" Well Pumps, Figs. 550, 551, 552, 553, 554, 848, 848½.—Continued.

	ALL SIZES.
Fulcrum or Bearer Top, Figs. 551, 552.....	\$1.10
Fulcrum or Bearer Top, Fig. 553.....	1.25
Fulcrum or Bearer Top, Fig. 848½.....	1.15
Fulcrum or Bearer Top, Figs. 554, 848.....	1.35
Stock or Standard only, Figs. 550, 553, 848½.....	3.75
Stock or Standard only, Figs. 551, 554, 848.....	4.25
Stock or Standard only, Fig. 552.....	4.75
Bearer Link, Figs. 553, 554.....	.50
Links, Fig. 848, 848½, per pair.....	.25
Crosshead, Figs. 848, 848½.....	.50
Long Connecting Rods, Figs. 550, 551, 552.....	.50
Long Flat Rod, Figs. 553, 554.....	.75
Long Polished Round Rod, Figs. 848, 848½.....	.75
Lever, Bearer, Brace, Bolts and Set Screws.....	.08
Pin through Rod, Figs. 553, 554.....	.15
Brace.....	.50
Extra Connecting Pipe and Rod, per foot.....	.50

Cylinder Repairs, see page 290.

Well Pump, Fig. 1039, and Well Pump Standard,

Fig. 1032.

STROKE.....	Fig. 1039 6-in.	Fig. 1032— 6-in.	Fig. 1032— 10-in.
Lever or Handle.....	\$1.00	\$1.00	\$1.25
Fulcrum or Bearer.....	.75	1.25	1.50
Stock or Standard.....	3.50	3.50	3.50
Bearer Link.....	.25	.25	.50
Rod.....	.75	.75	.50
Pin of Malleable Iron.....	.10	.10	.10
Brace.....	.50	.50	.50
Rod Coupling.....	.20	.20	.20

Cylinder Repairs, see page 290.

Goulds "Star" Well Pumps, Figs. 206, 207, and
Pump Standard, Fig. 845.

No.	1	2	3	4	5
Lever or Handle.....	\$0.75	\$0.75	\$0.85	\$0.85	\$0.85
Fulcrum or Bearer Top.....	.75	.75	.80	.80	.85
Stock or Standard only.....	2.00	2.25	2.60	2.75	3.00
Brace.....	.75	.75	.85	1.00	1.00
Long Connecting Rod.....	.50	.50	.50	.50	.50
Leather Packing for Base.....	.15	.15	.15	.15	.20
Lever, Bearer, Base and Brace Bolts.....	.08	.08	.08	.08	.08
Extra Connecting Pipe and Rod, Fig. 207, per ft.....	.50	.50	.50	.50	.50
2 feet Cast Set Length, Fig. 206.....	1.75	1.75	1.75	1.75	1.75
3 feet Cast Set Length, Fig. 206.....	2.25	2.25	2.25	2.25	2.25
Set Lengths complete, Fig. 207.....	3.50	...	4.00	...	...

Cylinder Repairs, see page 290.

Goulds Well Force Pump, Fig. 1153.

Air Chamber with Tube and Thumb-screw.....	\$2.50
Thumb-screw only.....	.15
Fulcrum and Clamp.....	1.50
Fulcrum Clamp only.....	.25
Lever.....	1.00
Link.....	.25

Crosshead.....	\$0.25
Brass Gland.....	.50
Hose Tube Nut.....	.25
Hose Tube.....	.50
Plunger Rod.....	.75
Brace.....	.25
Adjustable Brace Ring.....	.50
Brace Ring Set Screw.....	.05
Adjustable Base with Set Screws.....	1.50
Base Set Screws (2) each.....	.05
Reducer.....	.05
Bearer, Lever Pins and Sundry Bolts, each.....	.25
Cylinder Repairs, see page 290.	.08

Goulds Well Lift Pump, Fig. 1252.

Top Section only.....	\$1.50
Fulcrum.....	.75
Lever.....	1.00
Plunger Rod.....	.75
Adjustable Base with Set Screws.....	1.00
Base Set Screws (2) each.....	.05
Brace.....	.50
Adjustable Brace Ring.....	.50
Brace Ring Set Screw.....	.05
Sundry Bolts.....	.08
Cylinder Repairs, see page 290.	

Goulds Anti-Freezing Force Pumps, Figs. 1308, 1309.

Nos.....	2 and 4
Wood Handle or Lever with Weight.....	\$1.00
Wood Handle or Lever only.....	.50
Weight only for Handle or Lever.....	.75
Arms or Straps for Leather or Wood Handle, right and left.....	.35
Links (2) each.....	.35
Crosshead.....	.25
Upper or Long Plunger Rod.....	.75
Bearer or Air Chamber Collar and Set Screw.....	.50
Brass Gland.....	.25
Air Chamber.....	2.00
Air Chamber Brass Air Cock.....	.45
Air Chamber Pipe or Tube.....	.25
Air Chamber Plug.....	.10
Discharge Hose Tube with Packing.....	.35
Brace.....	.50
Brace Collar and Set Screw.....	.25
Base with Set Screw.....	1.00
Standard.....	1.50
Reducing Coupling.....	.25
Bottom Attachment with Brass Bushed Valve Seat.....	1.25
(Other Cylinder Repairs same as Fig. 1230, Brass Body, see page 290.)	
Cock Spout, Fig. 1309.....	\$2.50
Strainer.....	.60
Bolts with Nuts (each).....	.08
Cotters, Set Screws (each).....	.05
Rod and Handle for Vent or Drip, with Coupling.....	.50
Brass Drip Plug, Base.....	.40
Brass Drip Slide, Leather Faced.....	.25

PUMP REPAIRS—Continued

**Goulds "Star" Well Force Pumps and Standards,
Figs. 1244, 1245, 852½, 882½, all Sizes.
Figs. 853, 883 Nos. 0, 1, 2.**

Lever or Handle.....	\$1.25
Fulcrum or Bearer Top.....	1.25
Stock or Standard only, Figs. 853 and 883, No. 2.....	5.25
Stock or Standard only, Figs. 852½, 882½ and 853, 883 No. 1.....	4.75
Stock or Standard only, Figs. 1244, 1245 and 853, 883 No. 0.....	4.50
Links, per pair.....	.25
Crosshead, including Set Screw.....	.75
Long Polished Round Rod, Figs. 1244, 1245, 852½, 882½.....	.50
Short Polished Round Rod, Figs. 853, 883.....	.60
Brass Gland.....	.75
Air Chamber Inside Tube.....	.30
Spout, Figs. 852½, 1244 and 853.....	.50
Cock Spout, Figs. 882½, 1245, 883.....	2.50
Iron Cock Body and Brass Valve Seat, Figs. 882½, 1245, 883.....	1.00
Cock Body only, iron, Figs. 882½, 1245, 883.....	.80
Brass Valve Seat only, Figs. 882½, 1245, 883.....	.20
Brass Cap for Cock, Figs. 882½, 1245, 883.....	.50
Brass Packing Ring for Cock, Figs. 882½, 1245, 883.....	.15
Brass Valve Stem for Cock, Figs. 882½, 1245, 883.....	.60
Brass Valve Body for Cock, Figs. 882½, 1245, 883.....	.40
Valve Packing for Cock, Figs. 882½, 1245, 883.....	.05
Cap Packing for Cock, Figs. 882½, 1245, 883.....	.05
Small Brass Nut for Cock, Figs. 882½, 1245, 883.....	.04
Hose Tube Nut for Cock, Figs. 882½, 1245, 883.....	.25
Hose Tube.....	.25
Back Plug.....	.25
Brace.....	.50
Leather Spout Packing.....	.25
Leather Ring Packing.....	.10
Brass Thumb Screw.....	.25
Sundry Bolts.....	.08
Extra Connecting Pipe and Rod, per foot.....	.50

Cylinder Repairs, see page 290.

**Goulds "Star" Wind Mill Force Pumps and Standards,
Figs. 1247, 1248, 424, 426, 422, 423, 1355.**

Lever or Handle.....	\$1.40
Fulcrum and Guide, Figs. 422, 423 No. 0, and Figs. 1247, 1248.....	1.50
Pat. Extension Stroke Guide, Figs. 422, 423 No. 0, and Figs. 1247, 1248.....	.25
Fulcrum 6-in. Stroke, Figs. 422, 423 Nos. 1 and 2, and Figs. 424, 426.....	1.50
Fulcrum 10-in. Stroke, Figs. 422, 423 Nos. 1 and 2, and Figs. 424, 426, 1355.....	1.75
Fulcrum Link, 6-in. Stroke.....	.50
Fulcrum Link, 10-in. Stroke.....	.75
Fulcrum Top Casting, Fig. 1355.....	.50
Fulcrum Rod, Fig. 1355.....	.50
Fulcrum Bottom Casting, Fig. 1355.....	.25
Fulcrum Socket, Fig. 1355.....	.25
Stock or Standard only, Figs. 422 and 423 No. 2, 1355.....	5.25
Stock or Standard only, Figs. 422, 423 No. 1, and 424, 426.....	4.75
Stock or Standard only, Figs. 422, 423 No. 0, and 1247, 1248.....	4.50
Short Flat Rod, Figs. 422, 423 Nos. 1 and 2, and 424, 426, 1355.....	.50
Rod Coupling and Set Screw, Figs. 422, 423 Nos. 1 and 2, and 424, 426, 1355.....	.25
Long Round Plunger Rod, polished at top, Figs. 424 and 426.....	.60

Short, Flat and Round Rod, Figs. 422, 423 No. 0.....	\$1.00
Long, Flat and Round Rod, Figs. 1247, 1248.....	1.25
Brass Gland.....	.75
Air Chamber Inside Tube.....	.30
Spout, Figs. 422, 424, 1247, 1355.....	.50
Cock Spout complete, Figs. 423, 426, 1248.....	2.50
Iron Cock Body and Brass Valve Seat, Figs. 423, 426, 1248.....	1.00
Iron Cock Body only, Figs. 423, 426, 1248.....	.80
Brass Valve Seat only for Cock, Figs. 423, 426, 1248.....	.20
Brass Cap for Cock, Figs. 423, 426, 1248.....	.50
Brass Packing Ring for Cock, Figs. 423, 426, 1248.....	.15
Brass Valve Stem for Cock, Figs. 423, 426, 1248.....	.60
Brass Valve Body for Cock, Figs. 423, 426, 1248.....	.40
Valve Packing for Cock, Figs. 423, 426, 1248.....	.05
Cap Packing for Cock, Figs. 423, 426, 1248.....	.05
Small Brass Nut for Cock, Figs. 423, 426, 1248.....	.04
Hose Tube Nut.....	.25
Hose Tube.....	.25
Back Plug.....	.25
Brass Thumb Screw.....	.25
Brace.....	.50
Wind Mill Slide.....	.50
Female Wood Rod Coupling.....	.25
Leather Spout Packing.....	.15
Leather Ring Packing.....	.10
Bearer, Lever, Spout, Hook and Brace Bolts.....	.08
Pin through Flat Rod.....	.15
Extra Connecting Pipe and Rod, per foot.....	.50

Cylinder Repairs, see page 290.

Goulds Wind Mill Pump Standards, Figs. 762, 780, 1356.

No.	3	4	5
Lever or Handle, Fig. 762.....	\$1.25	\$1.40	\$1.40
Lever or Handle, Figs. 780, 1356.....	1.75	1.75	1.75
Fulcrum or Bearer Top, Fig. 762, 6-in. stroke.....	1.25	1.35	1.35
Fulcrum or Bearer Top, Fig. 762, 10-in. stroke.....	1.50	1.50	1.50
Fulcrum or Bearer Top, Figs. 780, 1356.....	2.00	2.00	2.00
Bearer Link, Fig. 762, 6-in. stroke.....	.50	.50	.50
Bearer Link, Fig. 762, 10-in. stroke and Fig. 780.....	.75	.75	.75
Stock or Standard only.....	3.75	4.25	4.75
Flat Rod.....	.60	.60	.60
Wind Mill Slide.....	.60	.60	.60
Female Wood Rod Coupling.....	.25	.25	.25
Rod Coupling.....	.10	.10	.10
Pin.....	.15	.15	.15
Brace.....	.50	.50	.50
Lever, Bearer, Brace Bolts and Set Screws.....	.08	.08	.08
Stock or Standard only, Figs. 1356.....	4.25	4.25	4.25
Fulcrum Top Casting, Fig. 1356.....	.50	.50	.50
Fulcrum Rod, Fig. 1356.....	.75	.75	.75
Fulcrum Bottom Casting, Fig. 1356.....	.25	.25	.25
Fulcrum Socket, Fig. 1356.....	.25	.25	.25

Goulds Wind Mill Pump Standards, Figs. 764, 765.

Lever or Handle.....	\$2.00
Fulcrum or Bearer Top, 6-in. Stroke.....	3.50
Fulcrum or Bearer Top, 10-in. Stroke.....	4.25
Bearer Link, 6-in. Stroke.....	.75
Bearer Link, 10-in. Stroke.....	1.00
Top Section.....	4.00
Intermediate Flange, 1½-in. Pipe.....	.50
Intermediate Flange, 1½, 2, 2½-in. Pipe.....	.60
Bottom Section.....	6.50

[Continued on Next Page.]

PUMP REPAIRS—Continued

Goulds Wind Mill Pump Standards, Figs. 764, 765.—
Continued.

Short Flat Rod.....	\$0.50
Pin through Flat Rod.....	.15
Rod Connection and Set Screw.....	.25
Polished Round Rod.....	.60
Cap, Fig. 765.....	.50
Cap, Fig. 765.....	.90
Gland, Fig. 765.....	.50
Spout, Fig. 765.....	.25
Air Chamber Spout Nut, Fig. 765.....	.50
Spout, Fig. 764.....	.75
Air Chamber only, Fig. 765.....	4.00
Air Chamber Cap, Fig. 765.....	.65
Air Chamber Inside Tube, Fig. 765.....	.35
Hose Tube Nut, Fig. 765.....	.35
Hose Tube, Fig. 765.....	.35
Braces, each.....	.75
Leather Packing for Spout, Intermediate Flange or Air Chamber.....	.25
Leather Ring Packing.....	.10
Female Wood Rod Coupling.....	.25
Wind Mill Slide.....	.50
Lever, Bearer, Flange, Hook and Brace Bolts.....	.12

Goulds "Star" Wind Mill Force Pump Standards,
Figs. 401, 402.

Lever or Handle.....	\$1.40
Fulcrum or Bearer Top, 6-in. stroke.....	1.50
Fulcrum or Bearer Top, 10-in. stroke.....	1.75
Bearer Link, 6-in. stroke.....	.50
Bearer Link, 10-in. stroke.....	.75
Stock or Standard only, Fig. 401.....	6.50
Top Section, Fig. 402.....	2.40
Intermediate Flange, 1½-in., Fig. 402.....	.50
Intermediate Flange, 1½, 2, 2½-in., Fig. 402.....	.60
Bottom Section, Fig. 402.....	3.60
Short Flat Rod.....	.50
Rod Coupling and Set Screw.....	.15
Polished Round Rod.....	.60
Brass Gland.....	.75
Stuffing Box Plug.....	.25
Air Chamber only.....	3.00
Air Chamber Cap.....	.35
Air Chamber Tube.....	.25
Air Chamber Nut.....	.45
Air Chamber Spout.....	.25
Hose Tube Nut.....	.25
Hose Tube.....	.25
Brace.....	.50
Leather Packing Intermediate Flange or Air Chamber.....	.25
Leather Ring Packings.....	.10
Lever, Bearer, Flange, Hook, Brace Bolts, etc.....	.08
Wind Mill Slide.....	.50
Female Wood Rod Coupling.....	.25
Pin Connecting Lever and Rod.....	.15

Goulds "Empire" Double-Acting Well Force Pumps,
Figs. 1362, 1359, 1363 and 1360.

No.....	2	4
DIAMETER OF LOWER CYLINDER, INCHES.....	2½	3
Lever of Handle, Figs. 1362 and 1363.....	\$1.00	\$1.00
Lever or Handle, Figs. 1359 and 1360.....	1.25	1.25

No.....	2½	4
DIAMETER OF LOWER CYLINDER, INCHES.....	2½	3
Bearer Link, Figs. 1359 and 1360.....	\$0.35	\$0.35
Stock only, two sides, Figs. 1362 and 1363.....	4.00	4.00
Stock only, two sides, Figs. 1359 and 1360.....	4.50	4.50
Spout.....	.50	.50
Spout Hose Tube.....	.25	.25
Spout Hose Tube Nut.....	.25	.25
Spout Swivel Nut.....	.25	.25
Spout Swivel Pipe Coupling.....	.25	.25
Crosshead, Figs. 1362 and 1363.....	.25	.25
Upper Plunger Rod, Figs. 1362 and 1363.....	.75	.75
Flat Wind Mill Rod, Figs. 1359 and 1360.....	.50	.50
Connecting Rod, Figs. 1359 and 1360.....	.50	.50
Pin Connecting Lever and Rod, Figs. 1359 and 1360.....	.15	.15
Rod Coupling, Figs. 1359 and 1360.....	.10	.10
Standard and Spout complete; no Pipes or Rod, Figs. 1362 and 1363.....	6.50	6.50
Standard and Spout complete; no Pipes or Rod, Figs. 1359 and 1360.....	7.25	7.25
Set-Length complete, Pipes, Rod and Upper Cylinder, Figs. 1362 and 1363.....	5.00	6.00
Set-Length complete, Pipes, Rod and Upper Cylinder, Figs. 1359 and 1360.....	7.50	8.50
Air Chamber Pipe.....	.50	.50
Air Chamber Pipe Cap.....	.15	.15
Discharge Pipe.....	.50	.50
Three-Way Cock.....	2.25	2.25
Three-Way Cock Lever.....	.75	.15
Three-Way Cock Rod and Coupling.....	.50	.50
Three-Way Cock Coupling only.....	.10	.10
Brass-Lined Upper Cylinder, complete.....	4.00	5.00
Brass-Lined Upper Cylinder only.....	2.00	2.75
Plunger and Short Rod.....	1.00	1.25
Plunger Rod only.....	.15	.15
Plunger Discs (2) each.....	.35	.75
Plunger Nuts (2) each.....	.50	.50
Plunger Leather, Crimped.....	.10	.15
Plunger Rod Coupling.....	.10	.10
Strainer.....	.60	.60
Lever, Link, Stock Bolts and Set Screws, each.....	.18	.18
Lower Cylinder Shell, Brass Body.....	4.50	5.25
Lower Cylinder Shell, Brass-Lined.....	4.00	4.50
Lower Cylinder, Brass Lining only.....	1.50	1.75
Lower Cylinder, Top Attachment.....	.75	.75
Lower Cylinder, Plunger complete, no rod.....	2.75	3.00
Lower Cylinder, Brass Plunger Cage only.....	.75	.90
Lower Cylinder, Brass Poppet Valve.....	.20	.40
Lower Cylinder, Plunger Follower, Iron.....	.85	1.00
Lower Cylinder, Plunger Follower Ring, Iron.....	.25	.30
Lower Cylinder, Plunger Crimped Leathers (2) each.....	.15	.25
Lower Cylinder, Bottom Attachment with "Universal" Bronze Lower Valve and Seat, complete.....	2.25	2.25
"Universal" Bronze Lower Valve and Seat, complete.....	1.25	1.20
"Universal" Bronze Seat and Cage only.....	1.00	1.00
"Universal" Cage, Top only.....	.25	.25
Poppet (leather-faced) for "Universal" Lower Valve.....	.25	.25
Leather Face for Poppet, for "Universal" Lower Valve.....	.10	.10
Ring Packings, each.....	.10	.10
Universal Bushing, for Deep Wells.....	1.00	1.00

PUMP REPAIRS—Continued

Goulds "Advance" Double-Acting Well Force Pumps,
Figs. 1146, 1147 and 1148.

No.	2	4
DIAMETER OF LOWER CYLINDER, INCHES.	2½	3
Lever or Handle, Fig. 1146.	\$1.00	\$1.00
Lever or Handle, Figs. 1147 and 1148.	1.25	1.25
Bearer, Fig. 1146.	1.15	1.15
Bearer, Figs. 1147 and 1148.	1.35	1.35
Bearer Link, Figs. 1147 and 1148.	.35	.35
Bearer Lever or Link Pin.	.10	.10
Crosshead, Fig. 1146.	.25	.25
Pipe Clamp with Bolts.	.75	.75
Spout.	.50	.50
Spout Swivel Nut.	.25	.25
Spout Swivel Pipe Coupling.	.25	.25
Spout Hose Tube.	.25	.25
Spout Hose Tube Nut.	.25	.25
Base.	1.75	1.75
Rod Guide.	.25	.25
Air Chamber Pipe or Standard, Fig. 1146.	.50	.50
Air Chamber Pipe or Standards, Fig. 1147 and 1148.	.55	.55
Discharge Pipe.	.35	.35
Differential Plunger Rod, Fig. 1146.	.75	.75
Flat Wind Mill Rod, Figs. 1147 and 1148.	.50	.50
Differential Plunger Rods, Figs. 1147 and 1148.	.75	.75
Short Lower Plunger Rod.	.15	.15
Lower Plunger Rod Nuts (2) each.	.05	.05
Upper Rod Couplings, Figs. 1147 and 1148.	.25	.25
Lower Rod Coupling.	.10	.10
Rod Guide, Fig. 1148.	.25	.25
Upper Cylinder, Top Attachment.	1.00	1.15
Upper Cylinder or Working Head, Fig. 1146.	1.50	1.75
Upper Cylinder or Working Head, Figs. 1147 and 1148.	1.75	2.00
Brass Differential Cylinder, Fig. 1146.	1.00	1.25
Brass Differential Cylinder, Figs. 1147 and 1148.	1.15	1.40
Differential Plunger Plate (upper or lower).	.15	.15
Differential Plunger Leather.	.10	.15
Differential Plunger Nuts (2) each.	.05	.05
Lower Cylinder Shell (Brass-Lined), Fig. 1146.	4.00	4.50
Lower Cylinder Shell (Brass-Lined), Figs. 1147 and 1148.	4.70	5.30
Lower Cylinder Shell (Brass Body), Fig. 1146.	1.50	1.75
Lower Cylinder Shell (Brass Body), Figs. 1147 and 1148.	6.00	7.00
Lower Cylinder Top Attachment.	1.00	1.00
Lower Cylinder Plunger complete, no Rod.	2.75	3.00
Lower Cylinder, Brass Plunger Cage only.	.75	.90
Lower Cylinder, Brass Poppet Valve.	.20	.30
Poppet (Leather Face) for "Universal" Lower Valve.	.15	.25
Lower Cylinder Plunger Follower, iron.	.85	1.00
Lower Cylinder Plunger Follower Ring, iron.	.25	.30
Lower Cylinder Bottom Attachment only.	1.00	1.00
"Universal" Bronze Lower Valve and Seat complete.	1.25	1.25
"Universal" Bronze Seat and Cage only.	1.00	1.00
"Universal" Cage Top only.	.25	.25
Poppet (Leather Face) for "Universal" Lower Valve.	.25	.25
Leather Face for Poppet "Universal" Lower Valve.	.10	.10
Lower Cylinder Ring Packings, each.	.10	.10
Three-Way Valve Case, Fig. 1148.	1.50	1.50
Three-Way Valve Seat, Fig. 1148.	.50	.50
Three-Way Valve Lever, Fig. 1148.	.25	.25
Three-Way Valve Upper Rod, Fig. 1148.	.50	.50
Three-Way Valve Lower Rod, Fig. 1148.	1.00	1.00
Three-Way Valve Rod Coupling, Fig. 1148.	.10	.10
Three-Way Valve Rubber Discs (2) each, Fig. 1148.	.25	.25
Three-Way Valve Washer, Fig. 1148.	.05	.05

Three-Way Valve Nuts (2) each, Fig. 1148.	\$0.05	\$0.05
Three-Way Valve Lever Fulcrum Collar, Fig. 1148.	.50	.50
Three-Way Valve Lever Fulcrum Bolt, Fig. 1148.	.10	.10
Three-Way Valve Bolt, Fig. 1148.	.25	.25
Three-Way Valve Brass Gland, Fig. 1148.	1.00	1.00
Three-Way Valve Discharge Elbow, Fig. 1148.	.50	.50
Three-Way Valve Discharge Elbow Nut, Fig. 1148.	.50	.50
Three-Way Valve Discharge Packing, Fig. 1148.	.10	.10
Strainer	.60	.60
Universal Bushing for Deep Wells.	1.00	1.00

Goulds "Star" Well Pump Standards, Figs. 846, 850.

No.	3	4	5
Lever or Handle.	\$1.00	\$1.25	\$1.25
Fulcrum or Bearer Top, Fig. 846.	.90	1.10	1.10
Fulcrum or Bearer Top, Fig. 850.	1.15	1.35	1.35
Stock or Standard only.	3.75	4.25	4.75
Links, Fig. 850, per pair.	.25	.25	.25
Crosshead, including Nut and Set Screws, do.	.50	.50	.50
Connecting Rod, Fig. 846.	.25	.25	.25
Polished Round Rod, Fig. 850.	.60	.60	.60
Brace.	.50	.50	.50
Lever, Bearer, Brace Bolts and Set Screws.	.08	.08	.08

Goulds Wind Mill Distributing Heads, Figs. 1031, 1033,
1061, 1391 and 1392.

Standard, Brake, Bearer, Lever, Link, Flat Rod and Coupling, 6-in. stroke	\$7.25
Standard, Brake, Bearer, Lever, Link, Flat Rod and Coupling, 10-in. stroke	8.25
Standard, Brake, Bearer, Lever, Link, Flat Rod and Coupling, adjustable stroke	9.25
Standard only	4.00
Brace	.50
Fulcrum or Bearer Top, 6-in. stroke	1.25
Fulcrum or Bearer Top, 10-in. stroke	1.50
Fulcrum or Bearer Top, adjustable stroke	2.00
Bearer Link, 6-in. stroke	.50
Bearer Link, adjustable stroke	.75
Bearer Link, adjustable stroke	.75
Lever or Handle, 6-in. stroke	1.00
Lever or Handle, 10-in. stroke	1.35
Lever or Handle, adjustable stroke	1.75
Bearer, Brace, Link and Lever Bolts, each.	.08
Base or Platform and Set-Length complete, including Working Head, Discharge Pipe and Spout, Figs. 1031, 1391.	13.50
Base or Platform and Set-Length complete, including Working Head, Discharge Pipe and Spout, Figs. 1033 and 1392.	15.00
Base or Platform, Figs. 1031 and 1391.	1.75
Base or Platform, Figs. 1033 and 1392.	2.00
Guide Plate	.25
Top Bolts, Set Screws for Base Guide Plate and Discharge Pipe, each.	.08
Spout	1.00
Spout Hose Tube.	.25
Spout Hose Tube Nut.	.25
Wheel Handle	.25
Lock Nut	.25
Valve Rod Brass Screw.	1.00
Valve Rod Gland.	.50
Valve Rod.	.75
Discharge Pipe.	2.25
Air Chamber Pipe, Figs. 1031 and 1391.	2.00

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PUMP REPAIRS—Continued

Goulds Wind Mill Distributing Heads, Figs. 1031, 1033, 1061, 1391 and 1392.—Continued

Air Chamber Pipe, Figs. 1033 and 1392.....	\$2.75
Working Head complete.....	5.00
Brass Packing Cylinder, Figs. 1391, 1392.....	2.00
Packing Cylinder Rod, Figs. 1391, 1392.....	.25
Packing Cylinder Glands, Figs. 1391, 1392 (3) each.....	.15
Packing Cylinder Plates, Figs. 1391, 1392 (3) each.....	.15
Packing Cylinder Washer, Figs. 1391, 1392.....	.05
Working Head only, Figs. 1031 and 1391.....	2.25
Working Head only, Figs. 1033 and 1392.....	2.50
Working Head Stuffing Box, Figs. 1031 and 1033.....	.50
Working Head Gland, Figs. 1031 and 1033.....	.50
Working Head Lower Flange.....	.50
Working Head Elbow.....	.40
Working Head Elbow Nut.....	.25
Valve Case only.....	.50
Valve Case Lock Nut.....	.35
Valve Discs (2) each.....	.25
Valve Plate.....	.25
Valve Rod Nut.....	.05
Flat Wind Mill Rod, 6-in. Stroke.....	.50
Flat Wind Mill Rod, 10-in. Stroke.....	.60
Flat Wind Mill Rod, Adjustable Stroke.....	.65
Long Round Middle Rod.....	.50
Brass Cased Plunger Rod, Figs. 1031 and 1033.....	.75
Rod Couplings, each.....	.15
Wind Mill Connection.....	.50
Wind Mill Rod Pin.....	.10
Leather Packing Rings, each.....	.08
Wrench.....	.25
Suction Flange Leather.....	.20
Sundry Bolts and Set Screws, each.....	.08
Fig. 1061, Forked Rod.....	2.00
Fig. 1061, Rod for Weight.....	.50
Fig. 1061, Weight.....	2.00
Fig. 1061, Regulator Cylinder.....	10.00
Fig. 1061, Chain.....	.50
Fig. 1061, Spring.....	1.25
Cylinder Repairs, see page 290.	

Goulds Heavy Deep Well Pump Standards, Figs. 236, 237, 887.

Lever.....	\$1.75
Top Section.....	3.00
Intermediate Flange, 1½-in.....	.50
Intermediate Flange, 1½ or 2-in.....	.60
Bottom Section.....	4.00
Brace.....	.60

Cylinders or Working Barrels, Figs. 1230, 1231, 1235, 1236, 1267, 1268.

No.	0	1	2	3	4	5	6	8	10	12	16	24
DIAMETER CYLINDER, INCHES.....		2½	2¾	3	3½	3¾	4	4½	5	6	8	10
Shell or Body, Iron, 10½-in.....	\$1.50	\$1.50	\$1.60	\$1.80	\$2.00	\$2.25	\$2.50	\$3.25	.....	.....	.....	.....
Shell or Body, Iron, 12-in.....	2.25	2.30	2.45	2.45	2.70	3.00	3.50	3.80	.....	.....	.....	.....
Shell or Body, Iron, 14-in.....	2.75	2.75	2.75	2.95	3.20	3.50	3.75	4.55	\$8.00	\$11.50	\$15.50	.....
Shell or Body, Iron, 16-in.....	3.00	3.00	3.00	3.30	3.55	3.80	4.05	4.80	8.25	14.50	18.25	.....
Shell or Body, Iron, 18-in.....	.....	.....	.....	.....	.....	.....	.....	9.00	16.00	20.00	\$30.00	.....
Shell or Body, Iron, 20-in.....	.....	4.30	4.55	4.80	5.05	5.30	5.50	8.00	.....	.....	.....	.....
Shell or Body, Iron, 22-in.....	.....	.....	.....	.....	.....	.....	.....	12.50	20.00	27.50	37.50	.....
Shell or Body, Brass-Lined, 10½-in.....	2.75	3.00	3.25	3.50	3.75	4.00	4.25	5.00	.....	.....	.....	.....
Shell or Body, Brass-Lined, 12-in.....	3.15	3.65	4.00	4.10	4.50	5.00	5.35	6.20	.....	.....	.....	.....
Shell or Body, Brass-Lined, 14-in.....	4.25	4.40	4.70	4.90	5.30	5.85	6.20	7.35	11.50	17.00	22.00

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Top-Knot, no Link.....	\$0.35
Link for same.....	.15
Polished Round Rod.....	.60
Cap, Fig. 236.....	.50
Cap, Figs. 237, 887.....	.75
Gland, Figs. 237, 887.....	.50
Spout, Fig. 236.....	.50
Air Chamber only, Figs. 237, 887.....	3.50
Air Chamber Cap, Figs. 237, 887.....	.50
Air Chamber Cock Nut, Figs. 237, 887.....	.50
Hose Tube, Figs. 237, 887.....	.35
Hose Tube Nut, Figs. 237, 887.....	.35
Air Chamber Inside Tube, Figs. 237, 887.....	.30
Intermediate Spout Elbow, Fig. 237.....	.75
Cock Nut, Fig. 887.....	3.00
Leather Packings for Spout Intermediate Flange or A. C.....	.15
Leather Ring Packings, A. C. Cap, Cock Nut or Hose Tube Nut.....	.10
Lever, Bearer, Flange and Brace, Bolts, etc.....	.12
A. C. complete.....	5.50

Goulds Heavy Deep Well Pump Standards, Figs. 592, 593, 763.

Lever, Figs. 592, 593.....	\$2.75
Lever for Wood Brake, Fig. 763.....	2.75
Wood Brakes, Fig. 763, each.....	.50
Bulcrum or Bearer Top.....	3.00
Top Section.....	4.00
Intermediate Flange, 1¼-in. pipe.....	.50
Intermediate Flange, 1½, 2 and 2½-in. pipe.....	.60
Bottom Section.....	6.50
Links, per pair.....	.40
Crosshead, including Nuts and Set Screws.....	.70
Polished Round Rod.....	.60
Cap, Fig. 592.....	.50
Cap, Figs. 593, 763.....	.90
Glands, Figs. 593, 763.....	.50
Spout, Fig. 592.....	.75
Air Chamber only, Figs. 593, 763.....	4.00
Air Chamber Cap, Figs. 593, 763.....	.50
Air Chamber Inside Tube, do.....	.35
Hose Tube Nut, do.....	.35
Hose Tube, do.....	.35
Braces, each.....	.75
Leather Packing for Spout, Intermediate Flange or Air Chamber.....	.25
Leather Ring Packing, Air Chamber and Hose Tube Nuts.....	.10
Flange, Hook and Brace Bolts.....	.12
Lever and Bearer Pins, only.....	.15
Spring Cotters for do.....	.05
Thumb Screw, Fig. 763.....	.25

PUMP REPAIRS—Continued

Cylinders or Working Barrels, Figs. 1230, 1231, 1235, 1236, 1267, 1268.—Continued.

No.	0	1	2	3	4	5	6	8	10	12	16	24
DIAMETER CYLINDER, INCHES	2	2½	2¾	3	3½	3¾	4	4½	4¾	5	6	8
Shell or Body, Brass-Lined, 16-in.	\$4.50	\$4.75	\$5.05	\$5.40	\$5.80	\$6.30	\$6.65	\$8.75	\$12.25	\$19.50	\$26.00	.....
Shell or Body, Brass-Lined, 18-in.	.....	.....	.....	.....	.....	.....	.....	.....	14.00	22.50	30.00	\$40.00
Shell or Body, Brass-Lined, 20-in.	6.00	6.25	6.50	7.00	7.50	8.00	9.00	11.00	.....	.....	.....	.....
Shell or Body, Brass-Lined, 22-in.	.....	.....	.....	.....	.....	.....	.....	17.50	27.50	37.50	50.00	.....
Shell or Body, Brass, 10½-in.	3.50	3.50	4.00	4.25	4.75	5.00	5.50	6.75	.....	.....	.....	.....
Shell or Body, Brass, 12-in.	4.00	4.00	4.50	4.75	5.25	5.75	6.25	7.25	.....	.....	.....	.....
Shell or Body, Brass, 14-in.	4.75	4.75	5.25	5.50	6.25	6.75	7.25	10.50	17.00	25.75	40.00	.....
Shell or Body, Brass, 16-in.	5.25	5.25	6.00	6.25	7.00	7.50	8.25	11.00	19.50	29.75	45.00	.....
Shell or Body, Brass, 18-in.	.....	.....	.....	.....	.....	.....	.....	24.00	34.75	50.00	100.00	.....
Shell or Body, Brass, 20-in.	6.50	6.50	7.50	7.75	8.75	9.25	10.25	16.00	29.00	39.75	55.25	110.50
Shell or Body, Brass, 22-in.	.....	.....	.....	.....	.....	.....	.....	30.00	42.50	62.50	125.00	.....
"AA," Iron Plunger, no rod.	.75	.75	.80	.90	1.00	1.25	1.60	2.00	.....	.....	.....	.....
"AA," Brass Cage and Valve Plunger, no rod.	1.15	1.15	1.25	1.35	1.50	2.00	2.50	3.00	.....	.....	.....	.....
"AA," All Brass Plunger, no rod.	1.50	1.50	1.60	1.80	2.00	2.50	3.25	4.00	.....	.....	.....	.....
"BB," Iron Plunger, no rod.	1.60	1.60	1.75	1.75	2.00	2.50	3.00	4.00	5.50	7.00	10.00	15.00
"BB," Brass Cage and Valve Plunger, no rod.	2.50	2.50	2.75	2.75	3.00	3.75	4.50	6.00	8.00	10.50	15.00	22.50
"BB," All Brass Plunger, no rod.	3.00	3.00	3.25	3.50	4.00	5.00	6.00	8.00	10.50	14.00	20.00	30.00
Plunger Rod only.	.15	.15	.15	.15	.15	.15	.15	.15	.20	.20	.20	.20
Iron Plunger Cage.	.35	.35	.35	.40	.45	.50	.60	.70	.80	.90	1.00	.....
Brass Plunger Cage.	.75	.75	.75	.80	.90	1.00	1.25	1.40	1.60	1.75	2.00	.....
Iron Poppet Valve.	.10	.10	.10	.10	.15	.15	.15	.15	.....	.....	.....	.....
Brass Poppet Valve.	.20	.20	.20	.20	.30	.30	.30	.40	.40	.40	.40	.....
Iron "AA," Plunger Follower (no leather).	.35	.35	.35	.40	.45	.50	.60	.70	.....	.....	.....	.....
Brass "AA," Plunger Follower (no leather).	.75	.75	.75	.80	.90	1.00	1.25	1.40	.....	.....	.....	.....
Iron "BB," Plunger Follower (no leather).	.75	.80	.85	.90	1.00	1.25	1.50	2.00	2.50	3.50	5.00	7.50
Brass "BB," Plunger Follower (no leather).	1.50	1.60	1.70	1.80	2.00	2.50	3.00	4.00	5.00	7.00	10.00	15.00
Iron "BB," Plunger Follower Ring.	.25	.25	.25	.25	.30	.35	.40	.50	.60	.75	1.00	1.50
Brass "BB," Plunger Follower Ring.	.50	.50	.50	.50	.60	.70	.80	1.00	1.25	1.50	2.00	3.00
Crimped Plunger Leather.	.15	.15	.15	.20	.25	.30	.35	.45	.55	.60	.75	1.25
Leather Lower Valve with Weight.	.25	.25	.25	.25	.35	.35	.35	.50	.50	.50	.50	.50
Lower Valve Leather only.	.15	.15	.15	.15	.15	.20	.20	.30	.30	.30	.30	.60
Lower Valve Weight.	.10	.10	.10	.10	.10	.15	.15	.15	.20	.20	.20	.40
"Universal" Bronze Valve and Seat complete.	1.25	1.25	1.25	1.25	1.25	1.75	1.75	2.50	2.50	.....	.....	.....
Bronze Seat and Cage for above.	1.00	1.00	1.00	1.00	1.00	1.25	1.25	1.75	1.75	.....	.....	.....
Bronze Cover for above.	.25	.25	.25	.25	.25	.35	.35	.50	.50	.....	.....	.....
Plunger Valve with Leather Face for above.	.25	.25	.25	.25	.25	.35	.35	.50	.50	.....	.....	.....
Top Attachment, iron.	.75	.75	.75	.75	.75	1.00	1.25	1.75	2.00	2.50	3.00	4.00
Top Attachment, brass.	2.25	2.25	2.25	2.25	2.25	3.00	3.00	3.75	4.50	5.25	7.50	15.00
Bottom Attachment, iron.	1.00	1.00	1.00	1.00	1.00	1.25	1.25	1.50	1.75	2.00	2.75	5.50
Bottom Attachment, brass.	3.00	3.00	3.00	3.00	3.00	3.75	3.75	4.50	5.25	6.00	8.25	16.50
Long Connecting Bolts, Figs. 1267, 1268.	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Leather Ring Packing.	.15	.15	.15	.15	.15	.20	.20	.20	.25	.25	.25	.50
Metallic Lower Valve, <i>extra net.</i>	.40	.40	.40	.40	.40	.50	.50	.60	.....	.....	.....	.....
Metallic Fitted Plunger, <i>extra net.</i>	.75	.75	1.00	1.00	1.00	1.25	1.25	1.50	.....	.....	.....	.....

Brass Artesian Well Cylinder, Fig. 904.

INSIDE DIAMETER CYLINDER, INCHES.	1¾	1¾	2¼	2¾	3	3¾	3¾	4¼	4¾	5¾	6¾	7¾
Plunger Complete	\$5.00	\$6.25	\$8.00	\$10.00	\$12.50	\$15.00	\$25.00	\$30.00	\$40.00	\$52.00	\$57.50	\$61.00
Plunger Cage	1.25	2.00	2.50	3.00	4.00	5.00	8.00	10.00	13.00	17.00	19.00	20.00
Plunger Follower.	2.00	2.50	3.00	3.50	4.50	5.00	9.00	11.50	15.00	20.00	22.00	22.00
Plunger Rings (2) each.	.25	.30	.40	.60	.75	.85	1.00	1.25	1.50	2.00	2.75	3.00
Lower Valve complete.	2.50	3.25	5.25	8.00	10.00	13.00	21.00	25.00	30.00	42.50	47.50	49.00
Lower Valve Cage.	1.25	1.50	2.50	3.00	4.00	5.00	8.00	10.00	13.00	17.00	19.00	20.00
Lower Valve Taper Plug.	1.00	1.25	2.00	2.50	3.50	4.00	7.50	9.00	11.50	13.00	17.50	18.00
Plunger or Lower Valve only.	.75	.75	1.00	2.25	2.50	4.00	5.25	6.50	8.00	13.00	18.00	20.00
Plunger or Lower Valve Packing.	.15	.15	.15	.15	.15	.15	.15	.15	.15	.25	.25	1.25
Bottom Attachment.	2.50	3.00	4.00	4.50	5.25	6.00	10.00	13.00	13.00	18.00	22.50	22.00
Top Attachment.	2.00	2.25	3.00	3.50	4.00	4.50	6.00	8.00	8.50	10.00	16.00	17.00

PUMP REPAIRS—Continued

Goulds "Vim" Well Force Pump, Fig. 1192.

DIAMETER OF CYLINDER, INCHES.....	2½	3	3½	4
Air Chamber.....	\$3.50	\$2.50	\$3.00	\$4.00
Outside Cylinder, 8-in. Stroke.....	4.75	4.75	6.00	6.00
Outside Cylinder, 12-in. Stroke.....	5.75	5.75	7.00	7.00
Cylinder or Stuffing Box Cap.....	1.25	1.25	1.50	1.50
Brass Gland.....	.65	.65	.75	.75
Inside Cylinder, 8-in. Stroke (Brass).....	4.00	4.50	6.00	6.50
Inside Cylinder, 12-in. Stroke (Brass).....	4.75	5.25	6.50	8.00
Inside Cylinder, Top Attachment.....	1.00	1.25	1.50	1.75
Inside Cylinder, Bottom Attachment.....	.50	.50	.75	1.00
Lower Valve complete.....	1.50	1.75	2.00	2.00
Lower Poppet Valve (Leather Faced).....	.25	.25	.25	.25
Lower Valve Seat or Cage only.....	1.00	1.25	1.50	1.50
Lower Valve Top Packing.....	.25	.25	.25	.25
Leather Valve Packing, each.....	.10	.10	.10	.10
Plunger Rod, Brass Cased.....	1.75	1.75	2.00	2.00
Brass Plunger complete, no rod.....	3.50	4.50	6.50	8.00
Brass Plunger Cage.....	1.05	1.35	1.80	2.10
Brass Plunger Follower.....	1.70	2.00	3.00	4.00
Brass Plunger Follower Ring.....	.50	.60	.80	1.00
Brass Plunger Valve.....	.20	.30	.30	.30
Plunger Packing (2) each.....	.15	.25	.35	.45
Check Valve complete.....	.25	.25	.35	.35
Check Valve Leather only.....	.15	.15	.20	.20
Check Valve Weight only.....	.10	.10	.15	.15
Check Valve Screw and Washer.....	.05	.05	.05	.05
Wind Mill Slide.....	.50	.50	.75	.75
Top Ring Packing (2) each.....	.15	.15	.20	.20
Sundry Bolts, each.....	.08	.08	.08	.08
Drip Plug.....	.25	.25	.25	.25

Goulds "Pacific" Wind Mill Force Pumps,
Figs. 1377 and 1378.

No.	2	4	6	8
DIAMETER OF CYLINDER, INCHES.....	2½	3	3½	4
Lever or Handle.....	\$1.00	\$1.50	\$2.00	\$2.00
Fulcrum or Bearer Top.....	2.00	2.00	3.50	3.50
Bearer Link.....	.50	.50	.50	.50
Cylinder.....	5.00	5.00	7.00	8.00
Brass-Lined Cylinder.....	7.00	7.00	10.00	12.00
Brass Cylinder.....	10.00	10.00	15.00	20.00
Top Section for Brass Cylinder Pump.....	2.75	2.75	4.00	4.75
Base, Fig. 1377.....	2.00	2.00	4.00	4.00
Bottom Cap, Fig. 1378.....	.75	.75	1.25	1.25
Hand Hole Plate.....	.25	.25	.30	.30
Hand Hole Cover Packing.....	.20	.20	.25	.25
Short Flat Rod.....	.50	.50	.50	.50
Pin.....	.15	.15	.15	.15
Rod Coupling and Set Screws.....	.25	.25	.25	.25
Plunger Rod Brass Cased.....	1.00	1.00	1.25	1.75
Brass Gland.....	.75	.75	1.00	1.00
Stuffing Box Plug.....	.25	.25	.25	.25
Plunger complete, no Rod.....	.80	1.00	1.30	1.50
Plunger Cage.....	.40	.50	.65	.75
Plunger Follower.....	.40	.50	.65	.75
Plunger Poppet Valve, Brass.....	.20	.20	.30	.30
Brass Plunger complete, no Rod.....	1.60	2.00	2.60	3.00
Brass Plunger Cage.....	.80	1.00	1.30	1.50
Brass Plunger Follower.....	.80	1.00	1.30	1.50
Plunger Leather or Packing.....	.15	.15	.20	.20
Check Valve complete.....	.25	.25	.35	.35
Check Valve Leather.....	.15	.15	.20	.20

No.	2	4	6	8
DIAMETER OF CYLINDER, INCHES.....	2½	3	3½	4
Check Valve Weight.....	\$0.10	\$0.10	\$0.15	\$0.15
Check Valve Screw and Washer.....	.05	.05	.05	.05
Lower Valve Leather.....	.15	.15	.20	.20
Lower Valve Weight.....	.10	.10	.15	.15
Lower Valve Screws.....	.05	.05	.05	.05
Air Chamber only.....	2.00	2.00	3.00	3.00
Air Chamber Discharge Nut.....	.35	.35	.45	.60
Air Chamber Discharge Tube.....	.50	.50	.75	1.00
Air Chamber Inside Tube.....	.30	.30	.40	.40
Air Chamber Cock Nut.....	.50	.50	.75	.75
Cock.....	2.00	2.00	3.00	3.00
Cock Handle only.....	.25	.25	.25	.25
Forked Rod.....	1.50	1.50	1.50	1.50
Hose Tube.....	.25	.25	.25	.25
Leather Ring Packing and Air Chamber Nuts.....	.10	.10	.10	.10
Leather Ring Packing under Fulcrum.....	.15	.15	.20	.20
Lever Bearer, Base Flange and Hook Bolts.....	.08	.08	.08	.08

Goulds House Force Pumps,

Figs. 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 264.

No.	2	4	6	8
DIAMETER OF CYLINDER, INCHES.....	2½	3	3½	4
Lever or Handle.....	\$1.00	\$1.00	\$1.50	\$1.50
Fulcrum or Bearer Top.....	1.25	1.25	1.50	1.75
Cylinder.....	3.00	3.50	4.00	6.00
Brass-Lined Cylinder.....	5.00	5.50	6.00	9.00
Brass Cylinders.....	6.00	7.00	8.00	12.00
Iron Top Section for Brass Cyl. Pump.....	2.50	2.75	2.75	4.00
Base, Figs. 390, 392, 394, 396, 398, 264.....	1.10	1.10	1.25	1.75
Bottom Cap, Figs. 391, 393, 395, 397.....	.50	.50	.50	.85
Links, per pair.....	.25	.25	.30	.30
Crosshead, including Nuts and Set Screws.....	.50	.50	.60	.60
Cap.....	.50	.50	.50	.75
Brass Gland.....	.75	.75	1.00	1.00
Plunger Rod.....	1.00	1.00	1.25	1.75
Plunger complete, no Rod.....	.70	.80	1.00	1.50
Plunger Cage.....	.35	.40	.50	.65
Plunger Follower.....	.35	.40	.50	.65
Plunger Poppet Valve.....	.10	.10	.15	.15
Brass Plunger complete, no Rod.....	1.40	1.60	2.00	2.60
Brass Plunger Cage.....	.70	.80	1.00	1.50
Brass Plunger Follower.....	.70	.80	1.00	1.50
Brass Plunger Poppet Valve.....	.20	.20	.30	.30
Plunger Leather or Packing.....	.15	.15	.15	.20
Lower Valve complete.....	.25	.25	.35	.35
Lower Valve Leather.....	.15	.15	.15	.20
Lower Valve Weight.....	.10	.10	.15	.15
Brass Valve Plate.....	.50	.50	.50	.75
Brass Valve Seat and Tube.....	1.00	1.00	1.25	1.50
Brass Tubes for Iron or Lead Pipe.....	.50	.50	.50	.75
Iron Pipe Nut.....	.35	.35	.35	.45
Lead Pipe Nut.....	.25	.25	.25	.35
Drip Plug.....	.25	.25	.25	.25
Check Valve Cage only, Figs. 390, 391.....	1.25	1.25	1.50	1.50
Check Valve Nut.....	.35	.35	.35	.45
Check Valve Tube, Brass.....	.50	.50	.50	.75
Air Chamber only, Figs. 392, 393, 394, 395, 396, 397, 398, 399.....	2.00	2.00	2.00	3.00
Air Chamber Inside Tube.....	.30	.30	.30	.40
Air Chamber Cap.....	.35	.35	.35	.45

[Continued on Next Page.]

PUMP REPAIRS—Continued

Goulds House Force Pumps, Figs. 390, 391, 392, 393, 394,
395, 396, 397, 398, 399, 264.—Continued.

No.	0	2	4	6	8
DIAMETER OF CYLINDER, INCHES.....	2	2½	3	3½	4
Air Chamber Discharge Nut.....	\$0.35	\$0.35	\$0.35	\$0.45	\$0.60
Air Chamber Cock Nut.....	.50	.50	.50	.75	.75
Air Chamber Brass Tube.....	.50	.50	.50	.75	1.00
Spout, Figs. 396, 397, 398, 399.....	.35	.35	.35	.50	.50
Cock Spout, Figs. 394, 395, 264.....	2.00	2.00	2.00	3.00	3.00
Cock Handle.....	.25	.25	.25	.25	.25
Hose Tube.....	.25	.25	.25	.25	.25
Leather Ring Packing.....	.10	.10	.10	.10	.10
Lever, Bearer, Base, Air Chamber or Bracket Flange Bolts.....	.08	.08	.08	.08	.08
Plank, Figs. 391, 393, 395, 397, 399.....	.75	.75	.75	.75	.75
Extra Connecting Pipe and Rod, Fig. 264, per foot.....	.50	.50	.50	.50	.50
Cylinder Repairs, Fig. 264, see page 290.					

Goulds "Universe" Force Pumps, Figs. 1168 and 1169.

No.	2	6
DIAMETER CYLINDER, INCHES.....	2½	3½
Base.....	\$0.85	\$1.25
Cylinder (Iron).....	1.50	2.25
Cylinder (Brass) Vickers Plated.....	3.00	4.25
Top for Brass Cylinder Pump.....	1.00	1.50
Bolt Ring.....	1.25	.50
Spout, 1168.....	.35	.50
Spout complete, 1169.....	2.00	3.00
Stuffing Box Cap.....	.75	1.00
Gland.....	.25	.25
Crosshead Link and Lever Pins.....	.10	.10
Bearer Link.....	.25	.40
Lever.....	.75	1.00
Plunger, no Rod.....	.80	1.60
Brass-Cased Plunger Rod.....	1.00	1.25
Plunger Cage.....	.35	.40
Plunger Follower.....	.10	.15
Plunger Poppet Valve.....	.10	.15
Plunger Leather.....	.15	.35
G. P. Plug.....	.25	.25
Thumb Screw.....	.25	.25
Lower Valve complete.....	.25	.35

Goulds House Force Pumps, Single Acting, Figs. 440,
441, 442, 714, 480, 281, 712, 713, 449.

No.	0	2	3	4	5	6
DIAMETER CYLINDER, INCHES.....	2	2½	2¾	3	3½	3¾
Lever or Handle, Figs. 440, 441, 442, 480, 281.....	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00
Fulcrum, Figs. 440, 441, 442, 480, 281.....	2.00	2.00	2.00	2.00	2.00	2.00
Pitman, Figs. 440, 441, 442, 281.....	1.00	1.00	1.00	1.00	1.00	1.00
Pitman, Figs. 714, 480.....	2.50	2.50	2.50	2.50	2.50	2.50
Lever Fork for welding, Fig. 480	.75	.75	.75	.75	.75	.75
Guide.....	.75	.75	.75	.75	.75	.75
Guide Rod.....	.60	.60	.60	.60	.60	.60
Crosshead.....	.50	.50	.50	.50	.50	.50
Brass Bowl.....	1.25	1.25	1.25	1.25	1.25	1.25
Cap.....	.65	.65	.65	.65	.75	1.00
Brass Gland.....	.50	.50	.50	.50	.75	.75
Iron Cylinder.....	3.50	4.00	4.25	4.50	5.00	6.00

No.	0	2	3	4	5	6
DIAMETER CYLINDER, INCHES.....	2	2½	2¾	3	3½	3¾
Brass-Lined Cylinder.....	\$5.50	\$6.00	\$6.50	\$7.00	\$8.50	10.00
Brass Cylinder.....	7.00	8.00	8.00	9.00	10.00	12.50
Iron Top Section for Brass Cylin- der Pump.....	2.50	2.75	2.75	2.75	3.25	4.00
Brass-Cased Plunger Rod.....	1.00	1.00	1.00	1.00	1.25	1.25
Plunger complete, no Rod.....	.70	.80	.90	1.00	1.15	1.30
Plunger Cage.....	.30	.35	.40	.45	.50	.60
Plunger Follower.....	.30	.35	.40	.45	.50	.60
Plunger Poppet Valve.....	.10	.10	.10	.10	.15	.15
Brass Plunger complete, no Rod.....	1.40	1.60	1.80	2.00	2.30	2.50
Brass Plunger Cage.....	.60	.70	.80	.90	1.00	1.20
Brass Plunger Follower.....	.60	.70	.80	.90	1.00	1.20
Brass Plunger Poppet Valve.....	.20	.20	.20	.30	.30	.30
Plunger Leather.....	.15	.15	.15	.15	.20	.20
Section or Disch. Valve complete.....	.25	.25	.25	.25	.35	.35
Section or Disch. Valve Leather.....	.15	.15	.15	.15	.20	.20
Section or Disch. Valve Weight.....	.10	.10	.10	.10	.15	.15
Section or Disch. Valve Screw and Washer.....	.05	.05	.05	.05	.05	.05
Bottom Cap or Attachment.....	1.00	1.00	1.00	1.00	1.25	1.25
Nut for I. or L. P. Tube.....	.35	.35	.35	.35	.45	.45
Brass Tube for I. or L. P.....	.50	.50	.50	.50	.75	.75
Brass Drip Plug.....	.25	.25	.25	.25	.25	.25
Machine Bolts, Set Screws, Lag Screws, each.....	.08	.08	.08	.08	.08	.08
Plank, Figs. 440, 441, 442, 714, 712, 713.....	1.50	1.50	1.50	1.50	1.50	1.50
Check Valve Case, Figs. 440, 480, 712.....	.75	.75	.75	.75	1.00	1.00
Check Valve Nut, Figs. 440, 480, 712.....	.35	.35	.35	.35	.45	.45
Check Valve Brass Tube, Figs. 440, 480, 712.....	.50	.50	.50	.50	.75	.75
Air Chamber, Figs. 441, 442, 714, 281, 713, 449.....	2.00	2.00	2.00	2.00	3.00	3.00
Air Chamber Inside Tube, Figs. 441, 442, 714, 713, 449.....	.30	.30	.30	.30	.30	.30
Air Chamber Nut, Figs. 441, 442, 714, 281, 713, 449.....	.35	.35	.35	.35	.45	.45
Air Chamber Brass Tube, Figs. 441, 714, 281, 713, 449.....	.50	.50	.50	.50	.75	.75
Cock Spout, Fig. 442.....	2.00	2.00	2.00	2.00	3.00	3.00
Spout Air Chamber, Fig. 281.....	2.50	2.50	2.50	2.50	3.50	3.50
Spout Air Chamber Nut.....	.35	.35	.35	.35	.45	.45
Spout Air Chamber Brass Tube.....	.50	.50	.50	.50	.75	.75
Rod Coupling and Set Screw, Fig. 281.....	.25	.25	.25	.25	.25	.25
Bracket with two Caps, Figs. 712, 713.....	5.00	5.00	5.00	5.00	6.00	6.00
Bracket only, Figs. 712, 713.....	3.50	3.50	3.50	3.50	4.50	4.50
Bracket Cap (a) each, Figs. 712, 713.....	.75	.75	.75	.75	.75	.75
Crank Shaft, Figs. 712, 713.....	3.50	3.50	3.50	3.50	5.00	5.00
Pitman, Figs. 712, 713.....	1.50	1.50	1.50	1.50	2.00	2.00
Pitman Head and Cap, Figs. 712, 713.....	1.25	1.25	1.25	1.25	1.25	1.25
Pitman Head only, Figs. 712, 713	.75	.75	.75	.75	.75	.75
Pitman Cap only, Fig. 712, 713.....	.50	.50	.50	.50	.50	.50
Balance Wheel, Figs. 712, 713.....	7.50	7.50	7.50	7.50	7.50	7.50
Balance Wheel Handle, Figs. 712, 713.....	.50	.50	.50	.50	.50	.50
Balance Wheel, Fig. 449.....	12.50	12.50	12.50	12.50	12.50	12.50

[Continued on Next Page.]

PUMP REPAIRS—Continued

Goulds House Pumps, Single Acting, Figs. 440, 441, 442, 714, 480, 281, 712, 713, 449.—Continued.

No.	0	2	3	4	5	6
DIAMETER CYLINDER, INCHES...	2	2 1/2	3 1/4	3	3 3/4	3 1/2
Balance Wheel Handle, Fig. 449.	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25
Crank and Winch Handle, Fig. 449	2.50	2.50	2.50	2.50	2.50	2.50
Crank only, Fig. 449.....	1.25	1.25	1.25	1.25	1.25	1.25
Winch Handle, Fig. 449.....	1.25	1.25	1.25	1.25	1.25	1.25
Crank Shaft, Fig. 449.....	3.50	3.50	3.50	3.50	3.50	3.50
Crank Shaft Box and Cap (2) each, complete, Fig. 449.....	2.00	2.00	2.00	2.00	2.00	2.00
Crank Shaft Box only (2) each.....	1.25	1.25	1.25	1.25	1.25	1.25
Crank Shaft Cap only (2) each.....	.75	.75	.75	.75	.75	.75
Pitman, Fig. 449.....	1.50	1.50	1.50	1.50	1.50	1.50
Pitman Head and Cap, Fig. 449.....	1.25	1.25	1.25	1.25	1.25	1.25
Pitman Head only, Fig. 449.....	.75	.75	.75	.75	.75	.75
Pitman Cap only, Fig. 449.....	.50	.50	.50	.50	.50	.50

Goulds "New Duplex" Water Lifter, Fig. 1250.

No.	0	1	3	4
Drip Pan.....	\$1.25	\$1.25	\$1.25	\$1.25
Yoke.....	2.00	2.00	2.00	2.00
Pins (2) each.....	.15	.15	.15	.15
Long Lever.....	.35	.35	.35	.35
Short Lever.....	.30	.30	.30	.30
Power Cylinder.....	8.50	10.00	8.50	10.00
Valve Plate.....	.25	1.25	1.25	1.25
Valve Chamber.....	1.50	1.50	1.50	1.50
Valve Chamber Cover.....	1.00	1.00	1.00	1.00
Valve Chamber Cover Plug.....	.30	.30	.30	.30
Power Cylinder Heads (2) each.....	.50	.65	.50	.65
Power Cylinder Slide Valves (2) each.....	.35	.35	.35	.35
Power Cylinder Valve Nuts (2) each.....	.30	.30	.30	.30
Power Cylinder Valve Rods (2) each.....	.25	.25	.25	.25
Valve Rod Crossheads (2) each.....	.25	.25	.25	.25
Valve Rod Crosshead Links (2) each.....	.25	.25	.25	.25
Valve Rod Glands (2) each.....	.35	.35	.35	.35
Valve Rod Followers (2) each.....	.40	.40	.40	.40
Pump Cylinder.....	9.50	9.50	10.00	10.00
Pump Cylinder Head (2) each.....	.50	.50	.75	.75
Pump Cylinder Valve Plate.....	1.25	1.25	1.50	1.50
Air Chamber.....	4.00	4.00	5.00	5.00
Valves (8) each.....	.25	.25	.25	.25
Valve Tops (8) each.....	.25	.25	.25	.25
Thumb Screws (2) each.....	.20	.20	.20	.20
Lock Nuts (1) each.....	.45	.45	.45	.45
Drip Plugs (10) each.....	.15	.15	.15	.15
Piston Rods (2) each.....	.50	.50	.50	.50
Piston Rod Glands (4) each.....	.35	.35	.35	.35
Piston Rod Gland Followers (4) each.....	.40	.40	.40	.40
Piston Rod Nuts (4) each.....	.15	.15	.15	.15
Piston Rod Crossheads (2) each.....	.25	.25	.25	.25
Power Piston Plates (4) each.....	.25	.25	.25	.25
Power Piston Middle Plates (2) each.....	.25	.25	.25	.25
Pump Piston Plates (4) each.....	.25	.25	.25	.25
Pump Piston Middle Plates (2) each.....	.25	.25	.25	.25
Power Piston Packings (4) each.....	.15	.15	.15	.15
Pump Piston Packings (4) each.....	.15	.15	.15	.15
Shelf.....	.50	.50	.50	.50
Brackets for Shelf (2) each.....	.35	.35	.35	.35
Set Lead Pipe Couplings.....	2.00	2.00	2.00	2.00
Set of Packing, complete.....	2.00	2.00	2.00	2.00
Set of Machine Screws, complete (36).....	1.80	1.80	1.80	1.80

Goulds Hydraulic Rams, Figs. 345, 345 1/2, 346, 346 1/2.

No.	2	3	4	5	6	7	8
Air Chamber.....	\$2.00	\$2.75	\$3.50	\$6.00	\$12.50	\$20.00	\$30.00
Air Chamber Surface Packing.....	.15	.15	.15	.25	.35	.35	.35
Air Chamber Bolts and Studs (each).....	.08	.08	.08	.08	.08	.08	.08
Base.....	2.00	2.50	4.00	7.00	10.00	15.00	30.00
Bed Plate, Fig. 346.....	.....	.....	.....	.....	5.00	6.50	10.00
Intermediate Piece, Fig. 346.....	.....	.....	.....	.....	8.00	13.00	18.00
Intermed. Piece, Fig. 346 1/2.....	.....	.....	.....	.....	5.00	7.50	12.00
Impetus Valve and Case, complete.....	4.00	4.50	6.50	10.00	14.00	23.00	32.50
Impetus Valve and Stem, with Nut Bumper only.....	1.50	1.75	2.75	4.00	6.00	9.50	12.50
Impetus Valve Stem with Nut and Set Screw only, Figs. 346, 346 1/2.....	.....	.....	.....	.....	.....	.....	5.00
Impetus Valve Stem Brass Nut only.....	.25	.25	.35	.50	.50	.75	1.00
Impetus Valve Stem Rubber Bumper only.....	.10	.10	.10	.10	.15	.15	.15
Impetus Valve Stem Cotter Pin only.....	.05	.05	.05	.10	.10	.15	.15
Impetus Valve Case Adjustable Nut and Lock Nut.....	2.25	2.75	4.00	5.50	7.00	10.00	20.00
Impetus Valve Case only.....	1.50	2.00	3.00	4.00	6.00	7.00	12.00
Impetus Valve Case Cover.....	.....	.....	.....	.....	.....	.....	5.00
Impetus Valve Case Surface Packing.....	.10	.10	.15	.20	.25	.35	.35
Impetus Valve Case Cover Bolts (6) each.....	.....	.....	.....	.....	.....	.....	.08
Brass Impetus Valve Case Cover Bolts or Studs and Nuts (each).....	.20	.20	.20	.....	.....	.....	.....
Impetus Valve Case Bolts or Studs and Nuts, ea.....	.....	.....	.08	.08	.08	.08	.08
Impetus Valve Case Adjusting Nut (Brass).....	.50	.50	.75	1.00	1.25	2.00	3.00
Impetus Valve Case Lock Nut (Brass).....	.25	.25	.25	.50	.50	.75	1.00
Drive Tube Nut, Fig. 345.....	.40	.40	.50	.....	.....	.....	.....
Drive Tube only (Brass).....	.50	.50	.50	.....	.....	.....	.....
Fig. 345.....	.50	.50	.50	.....	.....	.....	.....
Discharge Tube Nut, Fig. 345.....	.40	.40	.40	.....	.....	.....	.....
Discharge Tube only (Brass).....	.50	.50	.50	.....	.....	.....	.....
Fig. 345.....	.50	.50	.50	.....	.....	.....	.....
Ring Packing for Drive or Discharge Nut.....	.10	.10	.10	.....	.....	.....	.....
Blank Discharge Nut and Plate, Fig. 345.....	.45	.45	.50	.....	.....	.....	.....
Drive Pipe Flange, 345 1/2, 346, 346 1/2.....	.50	.50	.75	1.00	1.25	1.50	2.50
Discharge Pipe Flange, Figs. 345 1/2, 346, 346 1/2.....	.50	.50	.50	.75	1.00	1.25	1.75
Disch. Pipe Blank Flange, Figs. 345 1/2, 346, 346 1/2.....	.50	.50	.50	.75	.....	.....	.....
Surface Packing for Drive and Disch. Flanges, ea.....	.10	.10	.10	.15	.20	.20	.25
Bolts for Discharge and Drive Flanges (each).....	.08	.08	.08	.08	.08	.08	.08
Leather Check Valve complete.....	.35	.35	.50	1.00	.....	.....	.....

PUMP REPAIRS—Continued

Goulds Hydraulic Rams, Figs. 345, 345½, 346, 346½.
—Continued.

No.	2	3	4	5	6	7	8
Leather Check Valve only.	\$0.15	\$0.15	\$0.20	\$0.35	....	....	....
Check Valve Weight.....	.10	.10	.15	....	....	....	....
Check Valve Weights (2) each.....	....	....	.20	....	....	....	....
Check Valve Clamp (Brass).....	.10	.10	.10	.15	....	....	....
Screw and Washer.....	.05	.05	.05	.05	....	....	....
Brass Spring Check Valve complete, Figs. 346, 346½.....	....	....	....	....	\$2.25	\$2.50	....
Brass Spring Check Valve Seat, Figs. 346, 345½.....	....	....	....	....	1.00	1.25	....
Brass Spring Check Valve Stud, Figs. 346, 346½.....	....	....	....	....	.35	.35	....
Brass Spring Check Valve Rubber Disc, Figs. 346, 346½.....	....	....	....	....	.50	.50	....
Brass Spring Check Valve Spring, Figs. 346, 346½.....	....	....	....	.15	.15	.15	....
Brass Spring Check Valve Plate, Figs. 346, 346½.....	....	....	....	.25	.25	....	....
Brass Metal Check Valve complete, Figs. 346, 346½.....	....	....	3.00	4.00	4.75	\$6.00	....
Brass Metal Check Valve Cap, Figs. 346, 346½.....	....	....	.75	1.25	1.50	2.00	....
Brass Metal Check Valve only.....	....	....	.75	1.00	1.25	1.50	....
Brass Metal Check Valve Seat.....	....	....	1.50	1.75	2.00	2.50	....
Brass Metal Check Valve Spring.....	....	....	.15	.15	.15	.15	....

Goulds "New Alert" Double-Acting Force Pump, Fig. 1334.

No.	2	3	4	8
DIAMETER CYLINDER, INCHES.....	2½	3	4	8
Iron Cylinder.....	\$6.00	\$6.50	\$9.00	....
Brass-Lined Cylinder.....	8.50	9.50	13.00	....
Valve Plate.....	2.00	2.25	3.25	....
Air Chamber.....	2.25	2.50	3.25	....
Suction or Discharge Valve, complete (each).....	.75	1.00	2.00	....
Suction or Discharge Valve Weights (4) each.....	.10	.10	.20	....
Suction or Discharge Valve Leather only.....	.50	.70	1.00	....
Suction or Discharge Valve, Screw and Washer (each).....	.05	.05	.10	....
Cylinder Front Head.....	.85	1.00	1.25	....
Cylinder Back Head.....	.75	.85	1.00	....
Brass Gland.....	.50	.50	.75	....
Brass Gland Cap.....	.75	.75	1.25	....
Leather Packed Piston, complete, no Rod.....	1.00	1.25	2.50	....
Piston Body.....	.25	.30	.50	....
Piston Plates (2) each.....	.15	.20	.45	....
Piston Crimped Packings (2) each.....	.15	.25	.45	....
Brass Cased Piston Rod.....	1.25	1.25	1.75	....
Crosshead.....	.40	.40	.40	....
Link.....	.65	.65	.65	....
Lever complete with Wood Handle.....	2.50	2.50	2.50	....
Wood Handle only.....	.35	.35	.35	....
Brass Drip Plugs (2) each.....	.25	.25	.25	....
Brass Valve Seats (4) each.....	.50	.65	1.00	....
Brass Valves (4) each.....	.50	.75	.80	....
Bolts with Nuts.....	.08	.08	.08	....

"Challenge" D. A. Force Pumps, Figs. 470, 562, 774, 581, 582, 770, 604.

No.	2	4	8	12	16
DIAMETER CYLINDER, INCHES.....	2½	3	4	5	6
Air Chamber.....	\$2.50	\$2.50	\$3.00	\$5.00	\$6.00
Brass-Lined Cylinder and Two Valve Seats.....	11.00	11.00	12.00	16.00	20.00
Brass Valve Seats (4) each.....	.50	.50	.65	.80	1.00
Base with Two Brass Valve Seats.....	5.00	5.00	5.00	7.50	9.00
Front Cylinder Head only.....	1.25	1.45	1.25	5.00	6.00
Back Cylinder Head only.....	1.00	1.00	1.30	4.00	5.00
Brass Stuffing Box Cap.....	.50	.50	.75	1.00	1.25
Brass Stuffing Box Gland.....	.40	.40	.50	.75	.85
Leather Packed Piston and Rod complete, except Fig. 604.....	2.25	2.60	3.30	4.25	4.70
Brass-Cased Plunger Rod only, except Fig. 604.....	1.50	1.50	1.50	2.00	2.00
Leather Packed Piston complete, no Rod.....	.75	1.10	1.80	2.25	2.70
Piston Plates (3) each.....	.15	.20	.30	.35	.40
Piston Crimp Leather (2) each.....	.15	.25	.45	.60	.75
Nut on Piston Rod.....	.05	.05	.05	.05	.05
Fibre-Packed Piston, complete, no Rod.....	1.75	1.75	2.50	3.50	5.00
Spring-Packed Piston, complete, no Rod.....	7.50	7.50	10.00	12.50	17.50
Leather-Packed Brass Piston, complete, no Rod.....	2.50	2.50	3.50	5.00	7.50
Fibre-Packed Brass Piston, complete, no Rod.....	4.50	4.50	7.00	10.00	15.00
Spring-Packed Brass Piston, complete, no Rod.....	10.00	10.00	15.00	22.50	30.00
Brass Poppet Valves (4) each.....	.50	.50	.65	.80	1.00
Leather Valves complete (2) each.....	1.25	1.25	....	....	....
Leather Valves only (2) each.....	.75	.75	....	....	....
Leather Valve Weights only (4) each.....	.25	.25	....	....	....
Leather Valve Screw and Washer.....	.05	.05	....	....	....
Horse-Shoe Link, Front or Back, each.....	.50	.50	.75	1.25	1.25
Knuckle for Plunger Rod.....	.50	.50	.75	.75	....
Lever Sockets, Front or Back, each.....	1.50	1.75	1.75	2.00	2.25
Lever and Wood Handle.....	1.50	1.50	1.50	2.25	2.25
Lever only.....	1.20	1.20	1.20	1.75	1.75
Wood Handle only.....	.30	.30	.30	.50	.50
Hose Wrench, Figs. 470, 562, 774, 604.....	.25	.25	.25	.50	.50
Brass Suction or Discharge Valve.....	1.00	1.25	1.50	2.25	2.25
Brass Discharge Bushing.....	1.00	1.00	1.00	1.25	1.50
Brass Half Suction Coupling.....	.55	.55	.78	1.67	2.67
Brass Suction Swivel or Nut only.....	.35	.35	.50	.85	1.75
Brass Suction Hose Tube.....	.20	.20	.28	.48	.62
Brass Half Discharge Coupling.....	.50	.50	.55	.78	1.67
Brass Discharge Swivel or Nut only.....	.30	.30	.35	.50	.85
Brass Discharge Hose Tube.....	.20	.20	.28	.48	.62
Iron Pipe Suction Nut.....	.35	.35	.45	.60	.75
Iron Pipe Discharge Nut.....	.35	.35	.35	.45	.60
Brass Lead Pipe Elbow and Unions, ea.....	1.25	1.25	1.50	....	....
Brass Drip and Priming Plugs.....	.25	.25	.25	.35	.35
Rubber Packing, Base or Air Chamber.....	.30	.30	.30	.50	.50
Rubber Packing, Cylinder Heads.....	.30	.30	.30	.30	.30
Long Bolt for Horse-Shoe Link.....	.25	.25	.25	.30	.40
Lever Bolts.....	.15	.15	.15	.20	.20
Cylinder Head Bolts.....	.08	.08	.08	.08	.08
Long Cylinder Bolts with Brass Nuts (4), each, complete.....	.35	.35	.35	.35	....
Long Cylinder Bolts only (4) each.....	.20	.20	.20	.20	....
Short Cylinder Bolts with Brass Nuts (8), each, complete.....	....	....	....	....	.35
Short Cylinder Bolts only (8) each.....	....	....	....	....	.20

[Continued on Next Page.]

PUMP REPAIRS—Continued

"Challenge" D. A. Force Pumps, Figs. 470, 562, 774, 581, 582, 770, 604.—Continued.

No.	2	4	8	12	16
DIAMETER CYLINDER, INCHES.....	2½	3	4	5	6
Brass Nuts for Cylinder Bolts, each.....	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15
Fig. 470, Plank.....	1.00	1.00	1.00	1.00	....
Fig. 470, Plank Coach Screws (4) each.....	.03	.08	.08	.08	....
Fig. 562, Cross Bar.....	....	....	75	75	75
Fig. 562, Cross Bar Pins and Spring Cotters.....	....	....	.25	.25	.25
Figs. 581, 582, Suction Elbow.....	....	....	....	2.75	....
Figs. 581, 582, Suction Pipe Flange.....	....	....	....	1.25	....
Figs. 581, 582, Brass Priming Plug.....	....	....	....	.50	....
Figs. 581, 582, Brass Suction Flange.....	....	....	....	1.50	....
Figs. 581, 582, Brass Hose Sleeve.....	....	....	....	3.00	....
Figs. 581, 582, Hose Discharge Piece.....	....	....	....	1.00	....
Figs. 581, 582, Hose Disch. Piece Bolt.....	....	....	....	.50	....
Figs. 581, 582, Hose Discharge Nut.....	....	....	....	.50	....
Figs. 581, 582, Brass Half Discharge Coupling.....	....	....	....	1.33	....
Figs. 581, 582, Brass Discharge Swivel or Nut only.....	....	....	....	.85	....
Figs. 581, 582, Brass Discharge Hose Tube.....	....	....	....	.48	....

Goulds "Thresher" Tank Force Pump, Fig. 1145.

No.	12
DIAMETER CYLINDER, INCHES.....	5
Cylinder.....	\$8.00
Cylinder Front Head.....	1.25
Cylinder Back Head.....	1.00
Cylinder Top Caps or Plugs, Leather-Faced, (2) each.....	.50
Cylinder Poppet Valves, Leather-Faced, (4) each.....	.25
Cylinder Brass Stuffing Box.....	.75
Plunger and Rod complete.....	3.25
Plunger Rod only.....	1.00
Plunger complete, no Rod.....	2.25
Plunger Disc.....	.35
Plunger Plates, (2) each.....	.35
Plunger Crimped Packings, (2) each.....	.60
Knuckle for Plunger Rod.....	.50
Link.....	.50
Lever Socket.....	1.50
Wood Lever.....	1.00
Suction Nut.....	.50
Suction Hose Tube.....	.35
Spout Nut.....	.50
Spout.....	.75
Discharge Nut.....	.35
Discharge Hose Tube.....	.25
Rubber Packing, Front and Back Cylinder Head, each.....	.20
Leather Ring Packing for Plugs and Poppet Valves, each.....	.10
Brass Thumb Screws.....	.25
Bolts and Nuts, each.....	.08

Goulds Rotary Force Pumps, Figs. 297, 297½, 464, 665, 821, 819.

No.	1	2	3	4	5	6
Case, Cover, Stuffing Boxes and Caps.....	\$8.00	\$9.00	\$10.00	\$15.00	\$17.00	\$20.00
Case only.....	\$5.00	6.00	7.00	10.00	11.00	13.50
Cover only.....	2.50	2.50	2.50	3.50	4.00	4.50

No.	1	2	3	4	5	6
Cam, each.....	\$3.50	\$4.00	\$4.50	\$6.00	\$6.50	\$9.00
Stuffing Boxes.....	.50	.50	.50	.75	.75	.75
Tight Caps (3) each.....	....	....	....	.50	.50	.50
Base and Drip Plug, Figs. Figs. 297, 297½, 819.....	3.00	3.00	3.50	6.00	7.00	8.50
Base and Drip Plug, Fig. 665.....	3.50	3.50	4.25	7.50	9.00	....
Base and Drip Plug, Fig. 821.....	3.50	3.50	4.25	7.50	9.00	....
Lower Valve complete.....	.25	.25	.25	.35	.35	.50
Lower Valve Leather only.....	.15	.15	.15	.20	.20	.30
Lower Valve Weight.....	.10	.10	.10	.15	.15	.20
Lower Valve Screw and Washer.....	.05	.05	.05	.05	.05	.05
Spout and Cap.....	1.00	1.00	1.50	2.00	2.50	3.25
Spout only.....	.75	.75	.75	1.50	2.00	2.50
Balance Wheel, 1½-in. Dia. Balance Wheel, 20-in. Dia.....	1.00	1.00	1.00	....	....	....
Balance Wheel, 36-in. Dia. Brass Drip Plugs and Prim- ing Plugs.....	2.00	2.00	2.00	3.00	3.00	....
Round Head Machine Screws Bolts and Set Screws.....	.05	.05	.05	.05	.05	.05
Metallic Lower Valve extra. Fig. 821, Suction Hose Half Coupling.....	1.00	1.00	1.00	1.50	1.75	2.50
Fig. 821, Swivel only, Suction Coupling.....	.50	.50	.50	.90	1.50	....
Fig. 821, Hose Tube only, Suction Coupling.....	.25	.25	.25	.40	.75	....
Fig. 819, Pulley.....	5.25	5.25	5.25	13.80	13.80	....
Fig. 819, Outside Standard and Cap.....	2.00	2.00	2.00	5.00	5.00	....
Fig. 819, Outside Standard only.....	1.50	1.50	1.50	4.25	4.25	....
Fig. 819, Outside Standard Cap only.....	.50	.50	.50	.75	.75	....
Fig. 464, Crank.....	.50	.50	.50	....	....	....
Fig. 464, Suction Nut.....	.35	.35	.35	....	....	....
Fig. 464, Suction Pipe.....	1.00	1.00	1.25	....	....	....
Fig. 464, Barrel Attachment or Holder.....	2.00	2.00	2.00	....	....	....
Fig. 464, Hook.....	.35	.35	.35	....	....	....
Fig. 464, Discharge Hose Couplings, per pair.....	.37	.37	.37	....	....	....
Fig. 464, Hose Bands, per pair.....	.05	.05	.05	....	....	....

Goulds Power Rotary Force Pump, Figs. 1185½ and 1281.

No.	1	2	3	4	5	6
Case, Cover, Stuffing Boxes and Caps.....	\$8.00	\$9.00	\$10.00	\$15.00	\$17.00	\$20.00
Case only.....	5.00	6.00	7.00	10.00	11.00	13.50
Cover only.....	2.50	2.50	2.50	3.50	4.00	4.50
Stuffing Boxes.....	.50	.50	.50	.75	.75	.75
Tight Caps (3) each.....	....	....	....	.50	.50	.50
Cam with Short Shaft.....	3.50	4.00	4.50	6.00	6.50	9.00
Cam with Long Shaft.....	5.00	5.50	6.00	7.50	8.00	12.00
Intermediate Base.....	1.50	1.50	1.75	....	....	....
Bed Plate.....	4.00	4.50	5.00	7.00	8.00	20.00
Valve Plate.....	....	....	....	1.50	1.50	3.00
Spout and Cap.....	1.00	1.00	1.50	2.00	2.50	3.25
Spout only.....	.75	.75	1.25	1.50	2.00	2.50
Cap only.....	.35	.35	.35	.50	.50	.75
Pulleys, each.....	2.50	2.50	2.50	4.00	4.00	7.50

[Continued on Next Page.]

PUMP REPAIRS—Continued

Goulds Power Rotary Force Pump, Figs. 1185½ and 1281.

—Continued.

No.	1	2	3	4	5	6
Outside Standard, complete...	\$1.03	\$1.25	\$1.25	\$2.03	\$2.50	\$5.50
Outside Standard only.....	..	..	..	1.75	1.75	4.50
Outside Standard Cap only....	..	..	..	.75	.75	1.00
Lower Valve.....	.25	.25	.25	.35	.35	.50
Lower Valve Leather.....	.15	.15	.15	.20	.20	.30
Lower Valve Weight.....	.10	.10	.10	.15	.15	.20
Lower Valve Screw and Washer.....	.05	.05	.05	.05	.05	.05
Brass Drip and Priming Plugs.....	.25	.25	.25	.25	.25	.25
Round Head Machine Screws.....	.05	.05	.05	.05	.05	.05
Bolts and Set Screws.....	.08	.08	.08	.08	.08	.08
Metallic Lower Valve.....	1.75	2.00	2.25	2.50	3.00	5.00

Goulds Semi-Rotary Clock Force Pumps, Figs. 965, 982, 995 and 1149.

No.	1	2	3	4	5	6	8	9
Iron Case.....	\$2.00	\$2.50	\$2.75	\$3.50	\$4.50	\$6.00	\$6.50	\$15.00
Brass Case.....	6.50	11.50	15.50	20.00	25.00	35.00	40.00	85.00
Iron Cover.....	1.00	1.25	1.35	1.75	2.25	3.00	4.50	7.50
Brass Cover.....	3.00	5.00	6.25	9.00	12.00	16.25	28.00	30.00
Iron Gland Cap.....	.25	.25	.25	.30	.35	.50	.75	.75
Brass Gland Cap.....	.45	.50	.65	.75	1.00	1.25	2.00	2.50
Brass Gland.....	.25	.30	.50	.60	.75	1.00	1.25	1.50
Shaft or Stem.....	.25	.25	.30	.45	.45	.55	.65	.85
Brass Suction Valve Frame or Seats.....	1.25	1.50	1.75	2.00	2.25	3.00	3.50	5.50
Brass Suction Valves (2) each.....	.25	.30	.40	.60	.60	.75	.85	1.00
Brass Discharge Valve Frame or Seats.....	2.25	2.50	2.75	3.00	3.25	4.00	4.50	6.50
Brass Discharge Valves (2) each.....	.25	.30	.40	.60	.60	.75	.85	1.00
Discharge and Suction Valve Cotters (4) ea.	.05	.05	.08	.08	.08	.08	.10	.10
Discharge or Suction Flanges, each.....	.20	.30	.35	.35	.50	.60	.75	1.00
Malleable Iron Lever only.....	.50	.50	.75	.75	1.00	1.25	1.25	1.50
Lever Nut.....	.10	.10	.10	.15	.15	.15	..	..
Lever Socket.....	..	..	..	..	..	1.00	1.25	..
Lever and Wood Handle.....	..	..	..	..	..	1.25	1.50	..
Wood Handle only.....	..	..	..	..	..	.25	.25	..
Brass Thumb Screws.....	.25	.25	.25	.25	.25	.25	.25	.25
Suction or Discharge Surface Packing, each Flange and Cover Bolts, each.....	.10	.15	.15	.20	.25	.30	.70	.80
Standard, Figs. 982, 995	.08	.08	.08	.08	.08	.08	.08	.08
Air Chamber only, Fig. 995	1.00	1.25	1.50	2.00	2.50	3.00	..	..
Air Chamber Tube, Fig. 995	1.00	1.25	1.50	2.25	3.00	4.00	..	..
Air Chamber Plug, Fig. 995	.25	.25	.25	.25	.30	.30	..	..
Air Chamber Tight Nut, Fig. 995	.10	.10	..	..	..	..	..	..
Cock Spout, Fig. 995	..	.50	.50	.75	.75	..	..	..
Cock Spout Nut, Fig. 995	1.25	2.00	2.00	2.00	3.00	3.00	..	..
Suction or Discharge Elbows, Fig. 1149, each.	..	.50	.50	.50	.50	..	..	..
	.25	.25	.35	.50	.60	.60	..	..

Goulds "Pomona" Spray Pump, Fig. 1100.

No.	1	2
DIAMETER OF CYLINDER, INCHES.....	2½	2½
Cylinder or Rod Section.....	2.25	2.25
Brass Plunger complete, no Rod.....	3.50	3.50
Brass Plunger only.....	3.00	3.00
Brass Knuckle (male half).....	.35	.35
Brass Knuckle (female half).....	.50	.50
Brass Knuckle Pin.....	.15	.15
Plunger Rod only.....	.35	.35
Plunger Rod Crosshead.....	.25	.25
Brass Gland.....	1.25	1.25
Brass Gland Bolts (2) each.....	.15	.15
Brass Suction Valve.....	.30	.30
Brass Suction Valve Seat.....	.80	.80
Brass Suction Strainer.....	.50	.50
Brass Suction Bushing.....	.50	.50
Brass Discharge Valve.....	.50	.50
Brass Discharge Valve Seat.....	.50	.50
Anchor or Steady Rest complete.....	.15	.15
Air Chamber Body.....	1.60	1.60
Air Chamber Inside Tube.....	.50	.50
Air Chamber Cap or Bearer.....	.75	.75
Lever.....	1.00	1.00
Lever Pins with Spring Cotters (2) each.....	.25	.25
Brass Bushing for Hose.....	.25	.25
Gas Pipe Plug.....	.10	.10
Packing for Gland.....	.25	.25
Leather Ring Packings.....	.10	.10
Clamp Plates, right and left, each.....	.60	.60
Wing Agitator complete.....	1.25	1.25
Air Chamber Clamp for Agitator complete.....	.70	.70
Air Chamber Clamp Body for Agitator.....	.50	.50
Air Chamber Clamp Cap for Agitator.....	.20	.20
Plunger Rod Clamp for Agitator complete.....	.30	.30
Plunger Rod Clamp Body for Agitator.....	.20	.20
Plunger Rod Clamp Cap for Agitator.....	.15	.15
Agitator Bearing Bolts (2) each.....	.45	.45
Agitator Wooden Blades (2) each.....	.15	.15
Agitator Iron Wings or Arms (2) each.....	.20	.20
Barrel Plate Thumb Screws (6) each.....	.15	.15
Female Half Hose Coupling.....	.25	.25
Bolts with Nuts.....	.08	.08

Goulds "Sentinel Jr." and "Sentinel" Spray Pumps.

No.	1316	963
DIAMETER OF CYLINDER, INCHES.....	2	4
Brass Lined Cylinder with 2 Brass Valve Seats.....	\$6.50	\$11.00
Brass-Lined Cylinder only.....	5.50	9.00
Brass Lining only.....	1.00	1.50
Guide and Front Cylinder Head.....	1.60	..
Front Cylinder Head only.....	1.25	1.25
Back Cylinder Head only.....	.50	1.00
Brass Piston Complete, with Flax Packing, no Rod.....	1.50	5.00
Iron Piston complete, with special Canvas Packings, no Rod.....	1.00	..
Brass Piston Body.....	.75	1.75
Brass Piston Plate.....	.50	1.50
Flax Piston Packing.....	.25	.25
Iron Piston Body.....	.20	.30
Iron Piston Plates (2) each.....	.15	.20
Special Canvas Crimped Packings (2) each.....	.25	.35

[Continued on Next Page.]

PUMP REPAIRS—Continued

Goulds "Sentinel Jr." and "Sentinel" Spray Pumps.
—Continued.

Fig.	1316	963
No.	2	4
DIAMETER OF CYLINDER, INCHES.	2½	3
Brass Piston Rod.....	\$2.50	\$2.75
Brass Piston Rod Nut (2) each.....	.15	.15
Brass Bolted Gland.....	1.75	1.75
Crosshead with Bolts and Nuts.....	.35	.50
Crosshead Pin.....	.15	.15
Crosshead Brass Nuts (4) each.....	.10	.10
Horseshoe Link.....	.35	.50
Lever and Wood Handle.....	1.00	1.50
Wood Handle only.....	.20	.30
Lever Socket.....	1.00	1.75
Valve Plate with (2) Brass Valve Seats.....	2.50	3.50
Valve Plate only.....	1.60	2.50
Brass Valves (4) each.....	.50	.50
Brass Valve Seats (4) each.....	.40	.50
Air Chamber (6 in. x 30 in.).....	8.50	...
Air Chamber (5 in. x 21 in.).....	...	5.00
Air Chamber (5 in. x 30 in.).....	...	6.75
Brass Gland Cap.....	.40	.50
Brass Gland.....	.15	.15
Air Chamber Bolts (4) each.....	.15	.15
Link and Lever Bolts.....	.15	.15
Cylinder Head Bolts.....	.08	.08
Suction Plug.....	.10	.10
Brass Discharge Bushing (2) each.....	.55	1.00
Brass Suction Bushing.....	.65	1.00
Brass Thumb Screws (3) each.....	.20	.20
Brass Suction Half Coupling.....	.55	.55
Brass Discharge Half Coupling (2) each.....	.50	.50
Brass Suction Strainer.....	.50	.50
Air Chamber and Valve Plate Packings, each.....	.30	.30
Cylinder Head Packings (2) each.....	.20	.20
Gland Packing.....	.25	.25

Goulds Vertical Two-Cylinder Force Pumps,
Figs. 1318, 1402.

No.	0	2
DIAMETER PLUNGERS, INCHES.	2	2½
Cylinder only with four Brass Valve Seats.....	\$4.00	\$6.00
Brass Valve Seats (4) each.....	.25	.35
Brass Valves (4) each.....	.30	.50
Brass Valve Covers or Caps (4) each.....	.75	.75
Brass Gland (2) each.....	.75	.75
Brass Gland Followers (2) each.....	.75	.75
Brass Plunger with Head (2) each.....	1.50	1.50
Brass Plunger only (2) each.....	4.00	4.50
Plunger Head (2) each.....	3.75	4.25
Links (2) each.....	.25	.25
Link Pins with Cotter (4) each.....	.15	.15
Bearers.....	.75	.75
Bearer Pin and two Cotter.....	.15	.15
Bearer Stud and Nut.....	.40	.40
Lever Socket.....	.60	.75
Lever and Wood Handle.....	1.00	1.25
Wood Handle only.....	.25	.25
Brass Drip Plug (3) each.....	.25	.25
Air Chamber, Fig. 1318.....	5.00	6.50
Air Chamber, Fig. 1402.....	2.50	3.50

No.	0	2
DIAMETER PLUNGER, INCHES.	2	2½
Brass Discharge Bushing, Fig. 1402.....	\$0.35	\$0.50
Brass Discharge Half Hose Coupling, Fig. 1402.....	.25	.40
Brass Suction Bushing, Fig. 1402.....	.25	.50
Brass Suction Half Hose Coupling, Fig. 1402.....	.35	.50
Brass Strainer, Fig. 1402.....	.50	.50
Gland Packing.....	.25	.25
Air Chamber Packing.....	.30	.30
Wrench.....	.25	.25
Bolts and Nuts, each.....	.08	.08
Cotters, each.....	.05	.05

Goulds "Fruitall" Spray Pump with Agitator, Fig. 1188.

DIAMETER OF PLUNGER, INCHES.	4	4
STROKE, INCHES.	4	4
Cylinder or Bottom Section.....	...	\$1.75
Brass Plunger complete, no Rod.....	1.25	1.25
Plunger Rod only.....	.50	.50
Plunger Rod Crosshead.....	.25	.25
Brass Gland.....	.75	.75
Brass Suction Valve only.....	.25	.25
Brass Suction Valve, Seat and Strainer.....	1.00	1.00
Brass Discharge Valve only.....	.25	.25
Brass Discharge Valve Seat only.....	.15	.15
Anchor or Suction Rest, complete with Bolts and Washers.....	.50	.50
Air Chamber Body.....	1.50	1.50
Air Chamber Inside Tube.....	.25	.25
Air Chamber Cap or Bearer.....	.75	.75
Lever.....	.50	.50
Link.....	.15	.15
Lever and Link Pins with Cotter (3) each.....	.08	.08
Brass Discharge Hose Bushing.....	.25	.25
Barrel Attachment.....	.50	.50
Barrel Attachment Thumb Screws (2) each.....	.08	.08
Wing Agitator complete.....	1.00	1.00
Air Chamber Clamp and Cap for Agitator.....	.25	.25
Air Chamber Clamp Cap for Agitator.....	.15	.15
Air Chamber Clamp Body for Agitator.....	.15	.15
Plunger Rod Clamp and Cap for Agitator.....	.20	.20
Plunger Rod Clamp Cap for Agitator.....	.15	.15
Plunger Rod Clamp Body for Agitator.....	.15	.15
Agitator Wooden Blades or Paddles (2) each.....	.15	.15
Agitator Iron Arms (2) each.....	.20	.20
Agitator Bearing Pin.....	.08	.08
Sundry Bolts.....	.08	.08
Flax Plunger Packing.....	.15	.15

Goulds "Crescent" Yard Hydrants.

Figs.	860	811	813	1123	1040
Stock, Two Sides.....	\$2.00	\$2.50	...	...	\$2.00
Wheel Handle.....	.40	.40	\$0.40	\$0.40	...
Spring Cotter.....	.02	.02	.02	.02	...
Brass Screw.....	1.00	1.00	1.00	1.00	...
Top Cap.....	.30	.30	.50	.50	1.00
Spout.....	.40	.50	.35	.35	.40
Brass Hose Bushing.....	.25	.25	.25	.25	.25
Knuckle or Socket.....	.30	.30	...	...	...
Adjusting Nut.....	.05	.05	...	...	...
Plunger Rod Disc.....	...	...	.15	.15	...
Pipe Clamp.....	...	...	.25	.25	...
Spout Elbow.....	...	...	.15	.15	...
Bolts.....	.10	.10	...	...	.10

[Continued on Next Page.]

PUMP REPAIRS—Continued

Goulds "Crescent" Yard Hydrants.—Continued.

Figs.	860	811	813	1123	1040
Brass Valve Case.....	\$1.85	\$2.00	\$2.00	\$1.25	\$1.25
Brass Plunger with Packings.....	.80	1.00	1.00	.80	.80
Brass Swivel.....	.40	.60	.60	.40	.40
Brass Tube.....	.35	.50	.50	.35	.35
Plunger Cup Leather.....	.10	.10	.10	.10	.10
Leather Valve Disc.....	.02	.02	.02	.02	.02
Screw and Washer.....	.05	.05	.05	.05	.05
Shield for Valve Case.....	.40	.40	.40	.40	.40
Lever.....	.....	.....	.....	.65	.65
Locking Piece.....	.....	.....	.....	.50	.50

Goulds "Crescent" Street Washers.

Figs.	861	812	1240
Top only.....	\$0.80	\$1.00	\$0.80
Cover.....	.25	.40	.25
Screw Plate.....	.20	.20	.20
Key.....	.20	.20	.20
Brass Hose Bushing.....	.20	.20	.....
Brass Screw.....	1.00	1.00	1.00
Malleable Knuckle.....	.30	.30	.30
Exhausting Nut.....	.02	.02	.02
Brass Valve Case.....	1.25	2.00	1.25
Brass Plunger with Packings.....	.80	1.00	.80
Brass Swivel.....	.40	.60	.40
Brass Tube.....	.35	.50	.35
Plunger Cup Leather.....	.10	.10	.10
Leather Valve Disc.....	.02	.02	.02
Screw and Washer.....	.05	.05	.05
Machine Screws.....	.05	.05	.05
Discharge Swivel Elbow complete.....	.....	1.25	.....
Shield for Valve Case.....	.40	.40	.40

Goulds "Star" Yard Hydrant, Fig. 646.

SIZE	¾ in.	1 in.
Stock complete, no Pipe or Rod.....	\$4.40	\$4.40
Stock only.....	3.00	3.00
Top Cap.....	.50	.50
Bolts for Top Cap, each.....	.08	.08
Spout.....	.40	.40
Flange for Spout.....	.10	.10
Wheel Handle.....	.25	.25
Spring Cotter.....	.02	.02
Brass Screw.....	1.00	1.00
Malleable Elbow.....	.40	.50
Bottom Attachment Lock Nut.....	.35	.35
Bottom Attachment.....	.75	.90
Bottom Cap.....	.25	.30
Brass Valve Seat complete.....	2.50	3.75
Brass Valve Seat only.....	1.50	2.25
Plunger Valve Packing only.....	.15	.20
Top Part Plunger Valve.....	.40	.60
Bottom Part of Plunger Valve.....	.60	.90
Plunger Valve Packing only.....	.15	.20
Leather Valve Disc.....	.05	.05
Screw and Washer.....	.05	.05
Nut for Bottom Cap.....	.05	.05
Brass Swivel Nut.....	.50	.75
Brass Tube for Iron Pipe.....	.50	.85
Brass Tube for Lead Pipe.....	.50	.65

Goulds "Star" Street Washer, Fig. 647.

SIZE	¾ in.	1 in.
Case and Cover.....	\$1.50	\$1.50
Case only.....	1.00	1.00
Cover only.....	0.50	0.50
Inside Plate.....	.25	.25
Inside Plate Bolts, each.....	.08	.08
Brass Screw.....	1.00	1.00
Malleable Discharge Crook.....	.50	.60
Key.....	.20	.20
Brass Valve Seat complete.....	2.50	3.75
Brass Valve Seat only.....	1.50	2.25
Plunger Valve with Packing.....	1.00	1.50
Top Part of Plunger Valve.....	.40	.60
Bottom Part of Plunger Valve.....	.60	.90
Plunger Valve Packing only.....	.15	.20
Leather Valve Disc.....	.05	.05
Screw and Washer.....	.05	.05
Brass Swivel Nut.....	.50	.75
Brass Tube for Iron Pipe.....	.50	.75
Bottom Cap.....	.25	.30
Bottom Attachment.....	.75	.90
Bottom Attachment Lock Nut.....	.35	.35
Nut for Bottom Cap.....	.05	.05

Goulds Adjustable Curb Boxes, Figs. 1159 and 1184.

EXTREME LENGTH, INCHES.....	62	72	84
Cap, Fig. 1159.....	\$0.50	\$0.50	\$0.50
Brass Plug, Fig. 1184.....	.25	.25	.25
Cip, Fig. 1184.....	.50	.50	.50
Case or Standard.....	1.25	1.25	1.25
Key or Wrench.....	.50	.50	.50
Encasing Pipe.....	.75	1.05	1.25
Wrought Rod with Fork.....	.50	.60	.75
Malleable Fork only.....	.10	.10	.10
Brass Spring.....	.10	.10	.10

Goulds "Sun" and "No-Shock" Hydrants.

Figs.	1174	1116
Inlet Tube.....	\$0.50	\$0.50
Inlet Nut or Swivel.....	.60	.60
Inlet Packing.....	.05	.05
Valve Case.....	.75	.75
Bottom Attachment.....	.50	.50
Automatic Check Valve.....	.30	.30
Guard Case.....	.50	.50
Guard Case Set Screw.....	.05	.05
Lock Nut.....	.35	.35
Base.....	.75	.75
Top Attachment.....	.50	.50
Cap.....	.50	.50
Cap Bolts (2) each.....	.25	.25
Lever.....	.50	.50
Lever Latch.....	.15	.15
Plunger complete.....	1.50	1.50
Plunger Top.....	.50	.50
Plunger Bottom.....	.50	.50
Plunger or Valve Nut.....	.05	.05
Valve Disc.....	.10	.10
Plunger Crimp.....	.10	.10
Discharge Spout.....	.50	.50
Plunger Spring.....	.25	.25
Brass Screw.....	1.00
Wheel Handle.....	.25

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